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MONTANA STATE OUTDOOR RECREATION PLAN
MARCH 1, 1973

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VOLUME III

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NATURAL AND HUMAN RESOURCES

The state of Montana, fourth largest in size in the United States, has an extreme east-west length of about 550 miles and a north-south width of 275 miles. Its northern border, the 49th parallel, separates it from the Canadian Provinces of Saskatchewan, Alberta and British Columbia.

Montana is essentially an "outdoor state" with few metropolitan areas and a great deal of open space and beautiful scenery. Many factors combine to lend Montana's outdoor recreation a distinct quality justifying its position as a major attraction to a rapidly increasing number of visitors. Variety is one of the most important of the assets.

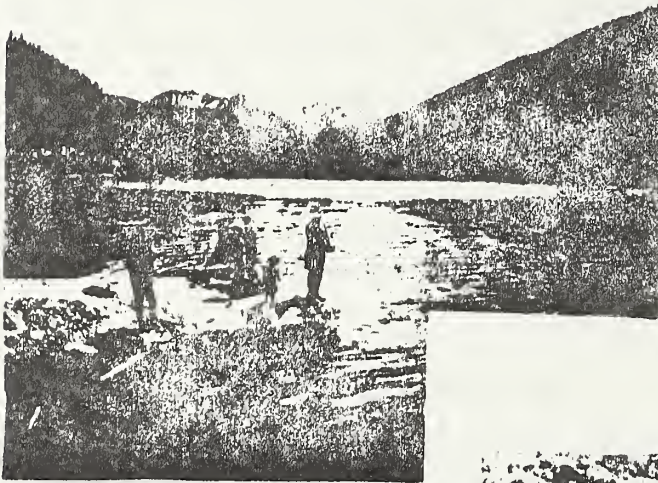
Topography

From the standpoint of topographic features and related scenery, Montana is most fortunate. The rugged Rocky Mountain system dominates the western half of the state. Here are found a multitude of mountain crests, running well above timber line. Intermingled canyons and valleys hold clear, cold streams, rivers and lakes. The majority of national forest lands, with a vast opportunity for camping, picnicking, hunting and fishing, are found in this mountainous section of the state. Here also is Glacier National Park and that portion of Yellowstone within the boundaries of Montana. In this area scenic drives, camping, picnicking, wilderness hikes and pack trips, trout fishing, hunting of mountain game and nature photography make up important recreational activities. Visiting old "ghost towns", reminiscent of a vivid epoch of Montana's past, is also increasing in interest. Skiing, skating, ice fishing and snowmobiling are among the popular winter sports.

Eastward, the mountains give way through foothills to rolling prairies and rugged breaks and badlands along the rivers and stream courses. The Missouri, Yellowstone, Musselshell and Milk Rivers dominate this vast area. Here the vivid history of the livestock industry lingers with the ranches and open range lands of today. The symmetrical patterns of grain fields stretch in many areas to the horizon to add charm and scenic variety to this portion of the state. River trips, horseback riding, scenic drives, nature photography, rock hounding, farm and ranch vacations, river, lake and reservoir fishing, spectacular hunting opportunities in the fall, as well as skating and informal

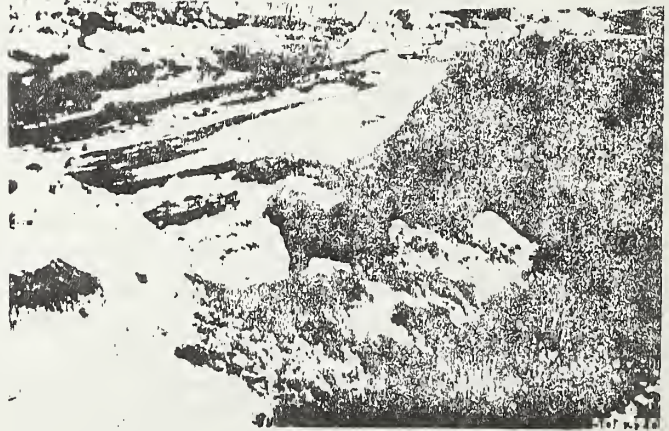
snow play during the winter months are among the outdoor activities enjoyed in the spaciousness of eastern Montana. Public domain lands, administered by the Bureau of Land Management, are widely scattered throughout this region adding opportunities for recreational enjoyment.

In the southwest, forming the natural boundary between Montana and Idaho, are the Centennial and Beaver-



Families cherish a lifetime the experiences gained in western Montana's out-of-doors. (U. S. Forest Service picture)

Relaxation and room to roam is provided by eastern Montana's spacious prairies, sweeping river valleys and pine-clad hills. (U. S. Forest Service picture)



head Ranges; in the west the lofty Bitterroots thrust their saw-toothed peaks and ridges skyward from the Bitterroot Valley. To the north mountainous territory continues as the Cabinet Range and Purcell Mountains also outline the state's western border. North of the Bitterroot Valley is the Flathead Valley and Flathead Lake (second largest natural freshwater lake west of the Mississippi, twenty-eight miles long and from five to fifteen miles wide), the Mission Range, and Glacier National Park. Stretching east and southeast into the Yellowstone National Park area and forming the eastern boundary of the region are the Lewis Range, Big and Little Belt Mountains, the Crazy Mountains, and the northern end of the Absaroka Range.

Lakes and Streams

Montana has more than 1,500 lakes and approximately 15,000 miles of fishing streams, including thirty-one major rivers. In addition, there are a great many man-made reservoirs. Many of these provide fishing. Wherever there is water of sufficient size, boating and water skiing are popular.

Lakes

Most of Montana's natural lakes are in the Rocky Mountain region. Flathead Lake is southwest of Glacier Park. Others include McDonald, Kintla, Bouman, Mary Ronan, Two Medicine, Placid, St. Mary's, Big Salmon, Seeley, Swan and Whitefish, as well as many others, most of which are popular with recreation users.

Streams

Montana has three major drainage systems within its borders. West of the Continental Divide is the Columbia River drainage basin; east of the divide, drainage is by way of the Missouri-Mississippi Rivers into the Gulf of Mexico. From portions of Glacier Park and Glacier County, streams drain via the Belly and St. Mary's Rivers into Hudson Bay.

The Clark Fork is the principal drainage in the Columbia River Basin. Its tributaries are the Bitterroot River, the Big Blackfoot, and the Flathead. In the Missouri Basin, principal rivers are the Missouri and Yellowstone. The Missouri is formed by the confluence of the Jefferson, Madison and Gallatin Rivers at Three Forks. As it flows northeast, water from about ten major tributaries increases the volume of the Missouri.

Reservoirs

Montana's abundant supply of water represents one of its greatest resources. Development of this water resource has been carried on by federal and state agencies as well as by private industry.

Federal projects are generally multipurpose, providing for a combination of power production, navigation, irrigation, flood control, and recreation. Major federal projects in Montana are Hungry Horse Dam on the South Fork of the Flathead River near Columbia Falls; Canyon Ferry Dam on the Missouri near Helena, and Fort Peck on the Missouri. Fort Peck is the largest earth-filled dam in the world. On both the Fort Peck and Canyon Ferry projects special provision was made for recreation facilities in the multipurpose plans. Yellowtail Reservoir on the Big Horn River has also been designated as a national recreation area.

Private projects (for the most part developed by the Montana Power Company) are also playing an increasingly important role in the provision of outdoor recreation.

Land Ownership

Total land area of Montana is 147,138 square miles (94,168,320 acres). Of these, 1,260 square miles are water. Approximately thirty percent of this land is owned by the Federal Government.

Climate

Montana's large area and great differences in elevation result in a highly diverse climate, with a wide temperature range. The average July temperature for the state is sixty-eight degrees; the average in January, about nineteen degrees.

West of the divide, the climate is of the north Pacific coast type; to the east, it is much colder. Mountains protect the western part of the state from the cold arctic air masses which produce low temperatures in the eastern portion. These cold temperatures, however, even east of the mountains, are frequently tempered by warm air currents known as "chinooks" which come from the west or southwest.

A consequence of its interior position and of the mountain mass to the west, is the rather small amount of precipitation that falls in the state. The average for the state is fifteen inches, with the western region getting about eighteen inches and the eastern region thirteen inches.

Because of brisk winter temperatures and frequent heavy snows, mountainous portions of Montana offer excellent winter sports opportunities.

Winters are fairly long, starting usually in late November and lasting well into March. Crisp, predominately clear weather, coupled with a good snow cover and exceptional scenery on the higher mountain slopes, has made skiing a major sport in Montana and one of increasing interest to visitors from neighboring states. With the rapidly growing interest in winter sports and increased facilities, it is expected that winter sports will play a major role in extending Montana's outdoor recreation season to a year-round program.

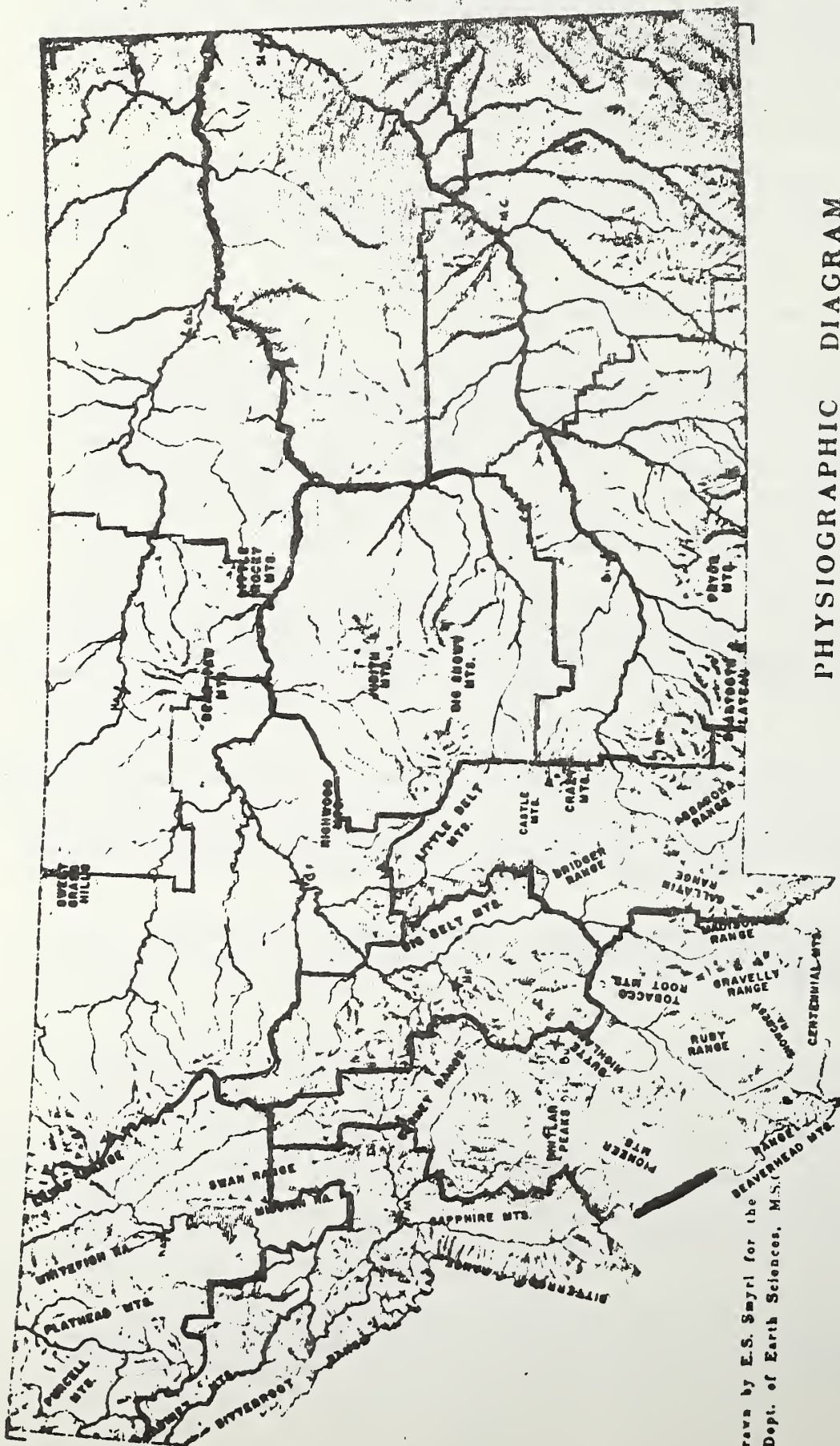
Winter fishing on an increasing number of lakes and rivers presents a popular outdoor activity for sportsmen and family groups.

Snowmobile trips from West Yellowstone into the Old Faithful area in Yellowstone National Park are becoming an increasingly popular winter activity. Unusual opportunities for photography and sighting of game in deep snow conditions are highlights of this winter outing. Snowmobile races and other competitive events attract thousands of visitors to this area.

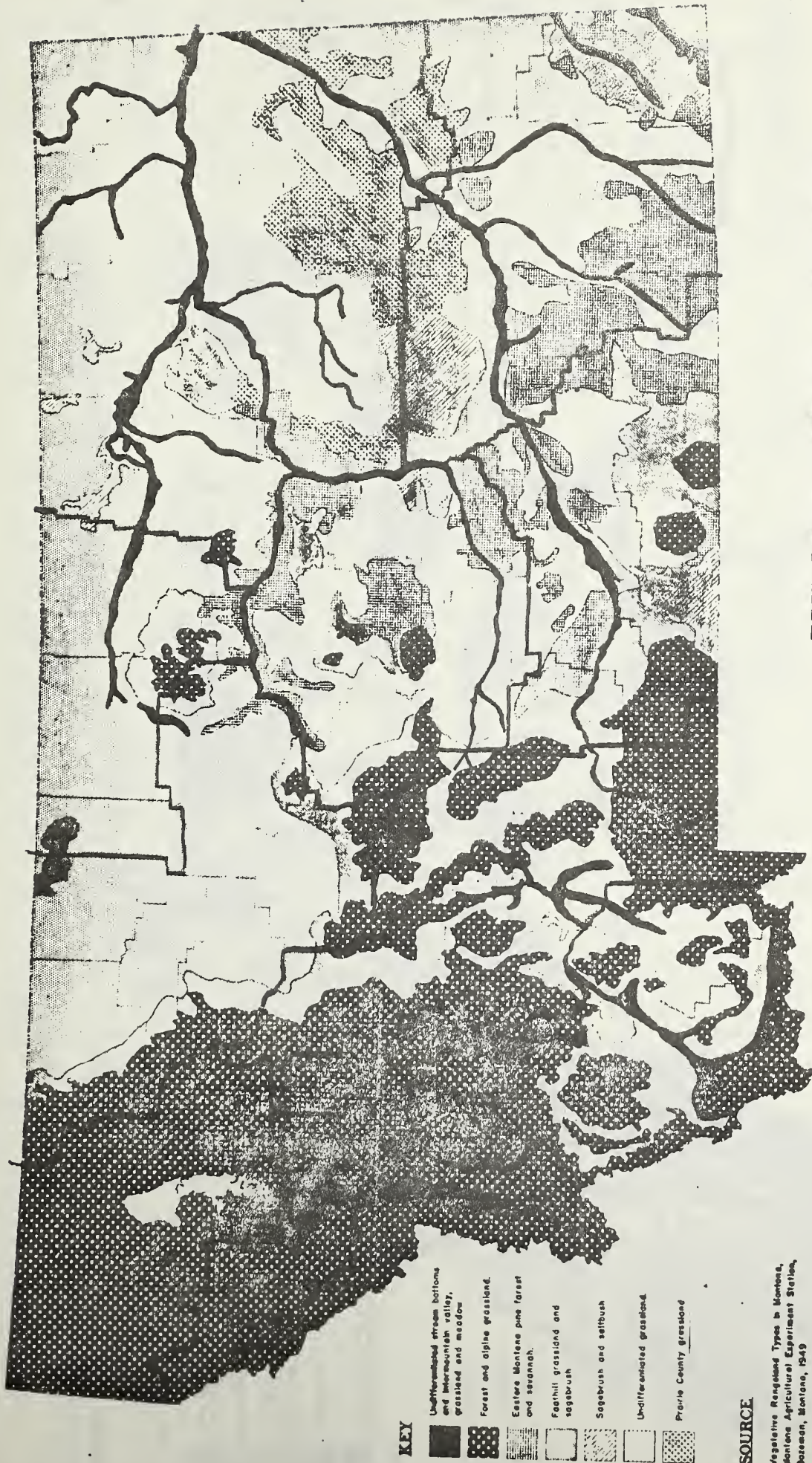
With the mild days of early spring, driving for pleasure coupled with hikes and photography bring Montana residents out-of-doors in large numbers. Sighting of young animals, large flocks of snow geese, swan and other waterfowl returning through the state in the spring, and growing vegetation all make this a pleasant period for enjoyment of the out-of-doors. Summers that tend to be warm during the day with cool nights are ideal for camping, picnicking and other outdoor recreation activities. The variety of Montana's summer outdoor activities coupled with a pleasant environment is building up an increasing number of participants. The development of additional facilities, particularly those having to do with camping opportunities, could add much to the volume and pleasure of summer outdoor recreation in Montana.

Fall, introduced by zestful Indian summer days with a splash of frost--turned color--often followed by colder weather and tracking snow--finds sportsmen seeking Montana's out-of-doors by the thousands. Elk, deer, mountain sheep and goats, as well as moose, black and grizzly bears, represent the game of the mountain country. Large numbers of antelope and deer predominate on the prairies and along the river breaks of eastern Montana. Mountain and prairie grouse are native standbys of the game bird hunter. These have been augmented by wild turkeys and ring-necked pheasants, as well as Hungarian and chukar partridges, species that have responded well to introduction.

Two major waterfowl flyways cross the state. The presence of ducks and geese add further variety to fall outdoor activities.



Drawn by E.S. Smyrl for the
Dept. of Earth Sciences, M.C.



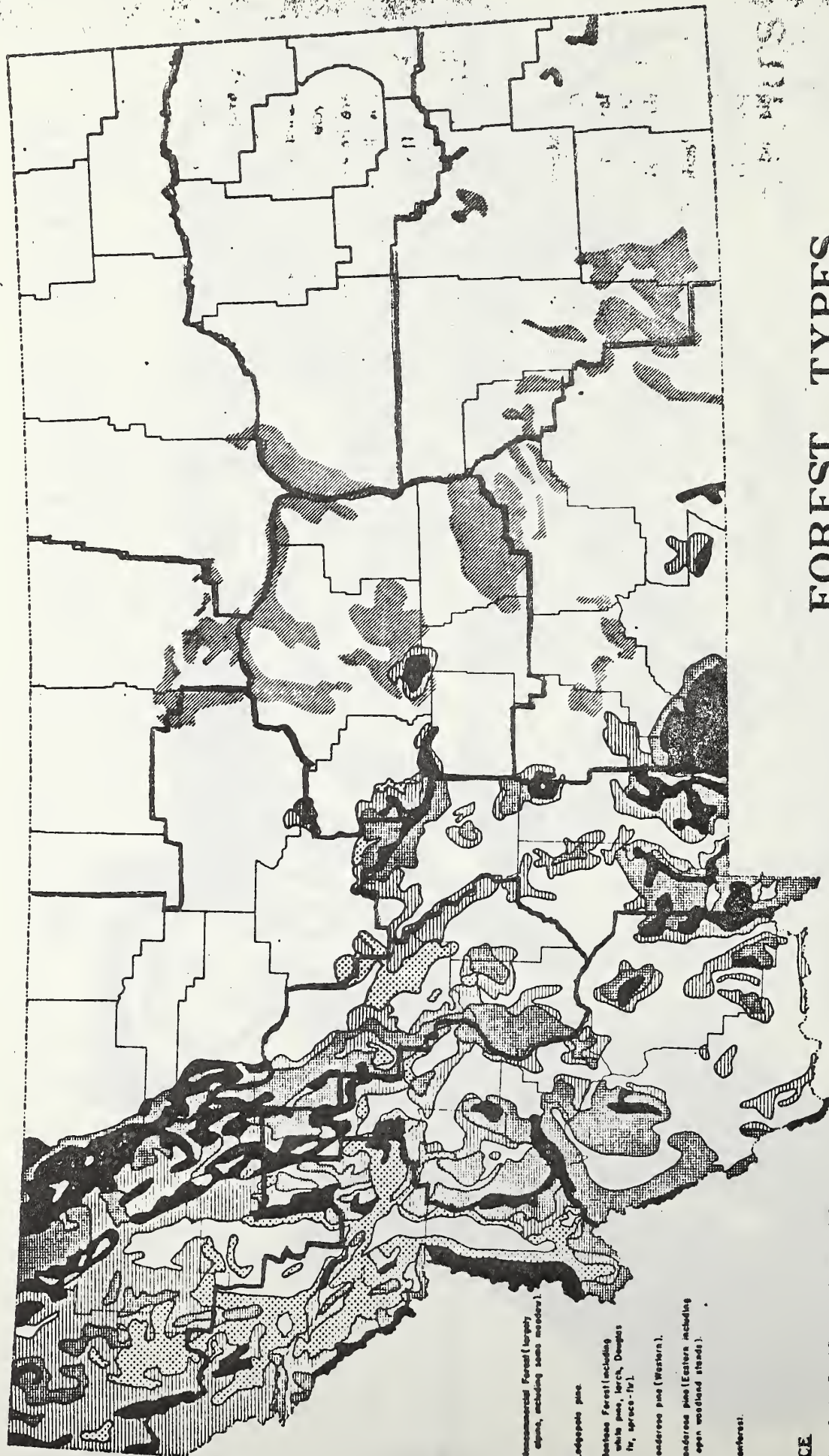
KEY

- Undifferentiated stream bottoms and intermountain valley, grassland and meadow
- Forest and alpine grassland
- Eastern Montana pine forest and scruboak
- Foothill grassland and sagebrush
- Sagebrush and saltbush
- Undifferentiated grassland
- Prairie County grassland

SOURCE

Vegetative Rangeland Types in Montana, Montana Agricultural Experiment Station, Bozeman, Montana, 1949

VEGETATIVE TYPES



KEY

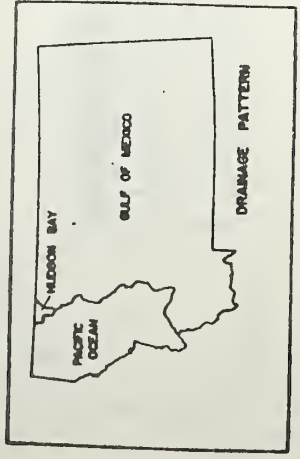
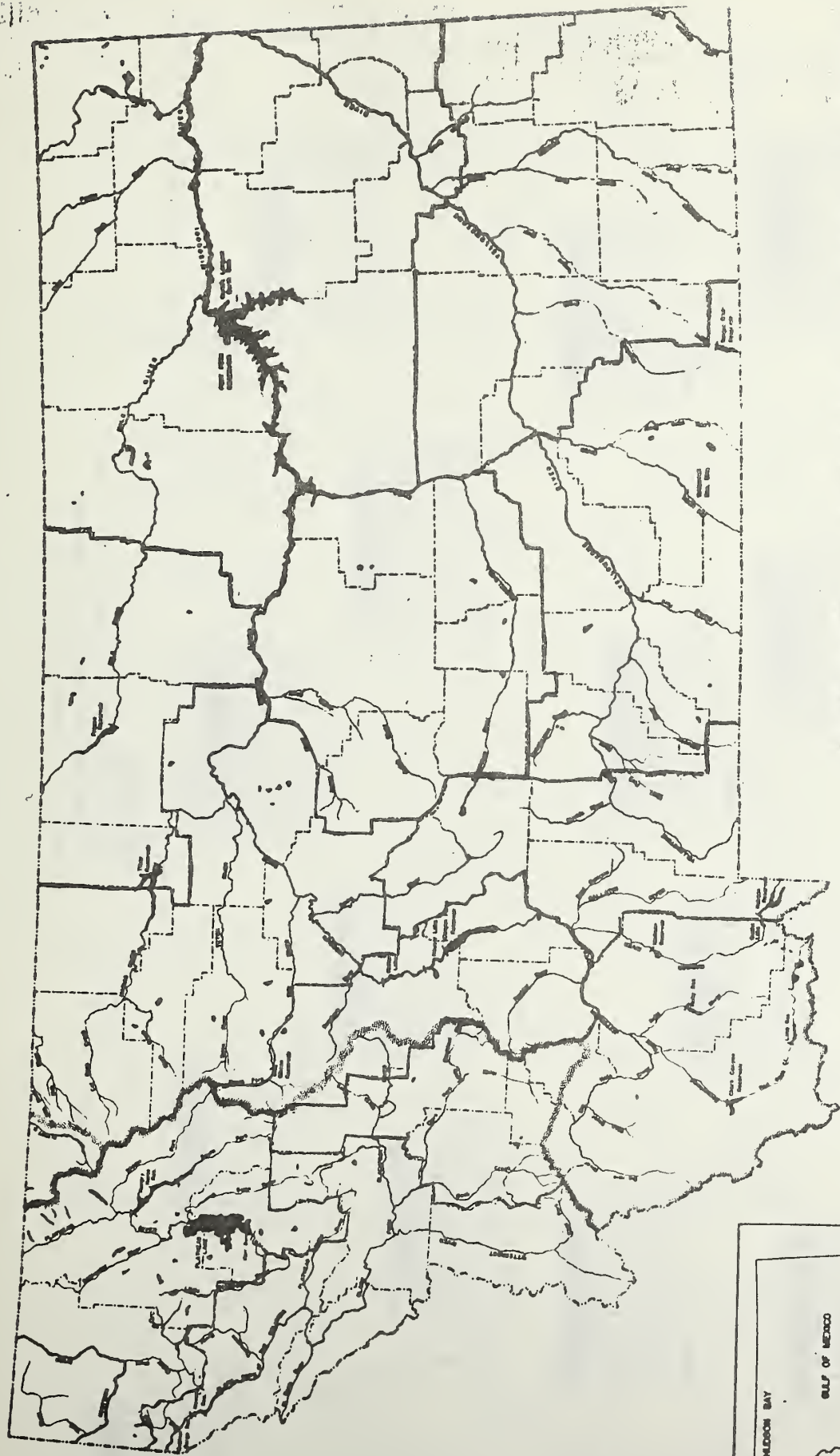
- Noncommercial Forest (largely
spruce, including some meadow)
- Lodgepole pine
- Montane Forest (including
white pine, larch, Douglas
fir, spruce-fir)
- Ponderosa pine (Western)
- Ponderosa pine (Eastern, including
open woodland stands)
- Barrenland

SOURCE

U.S.D.A., Forest Service, Forest Resources of Montana, 1952.

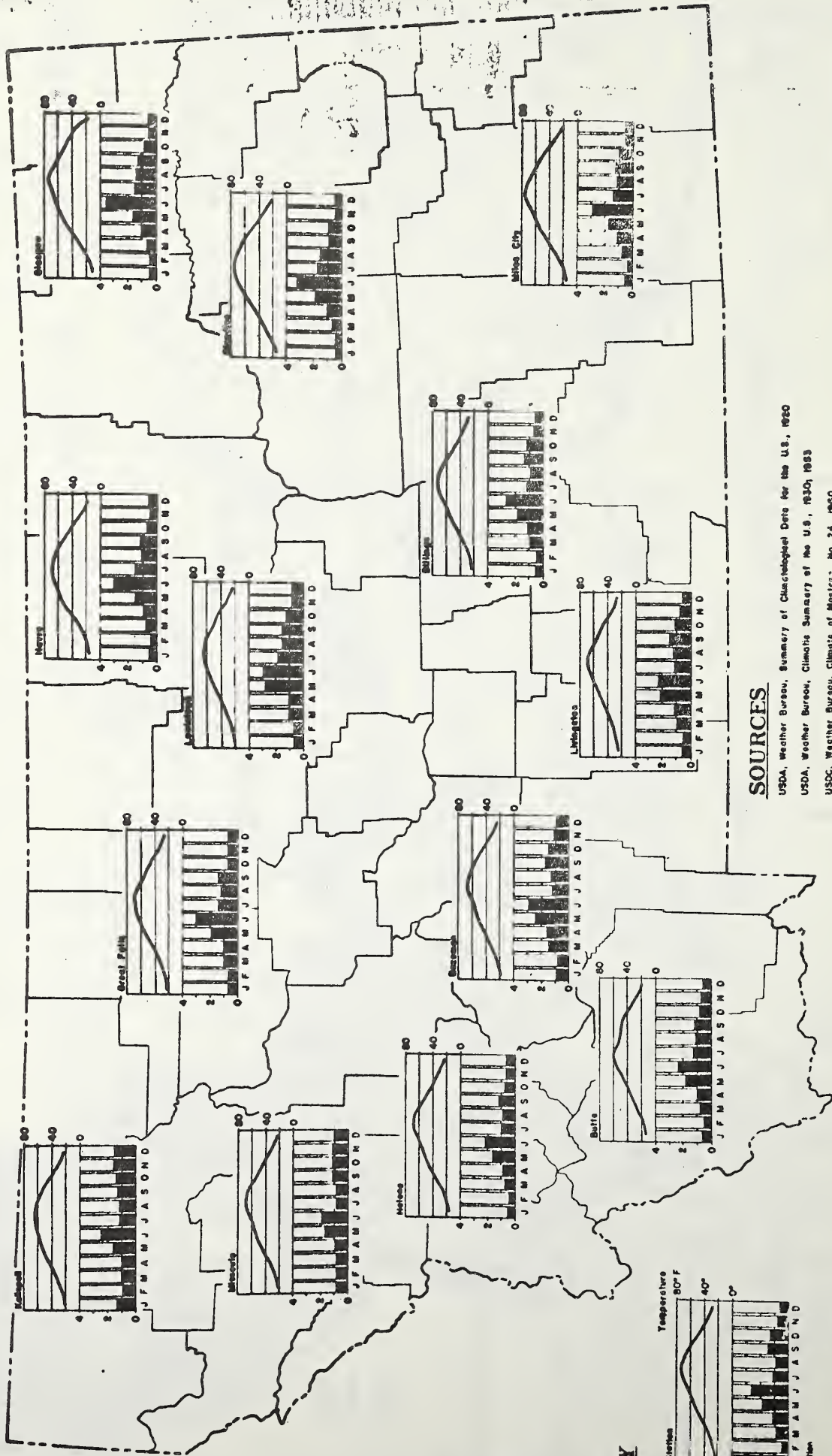
FOREST TYPES

MAJOR WATER FEATURES

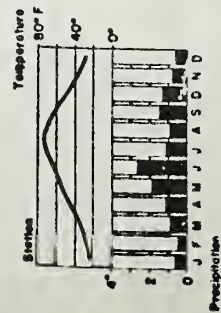


TEX 1/3

CLIMATIC DATA FOR SELECTED STATIONS



KEY



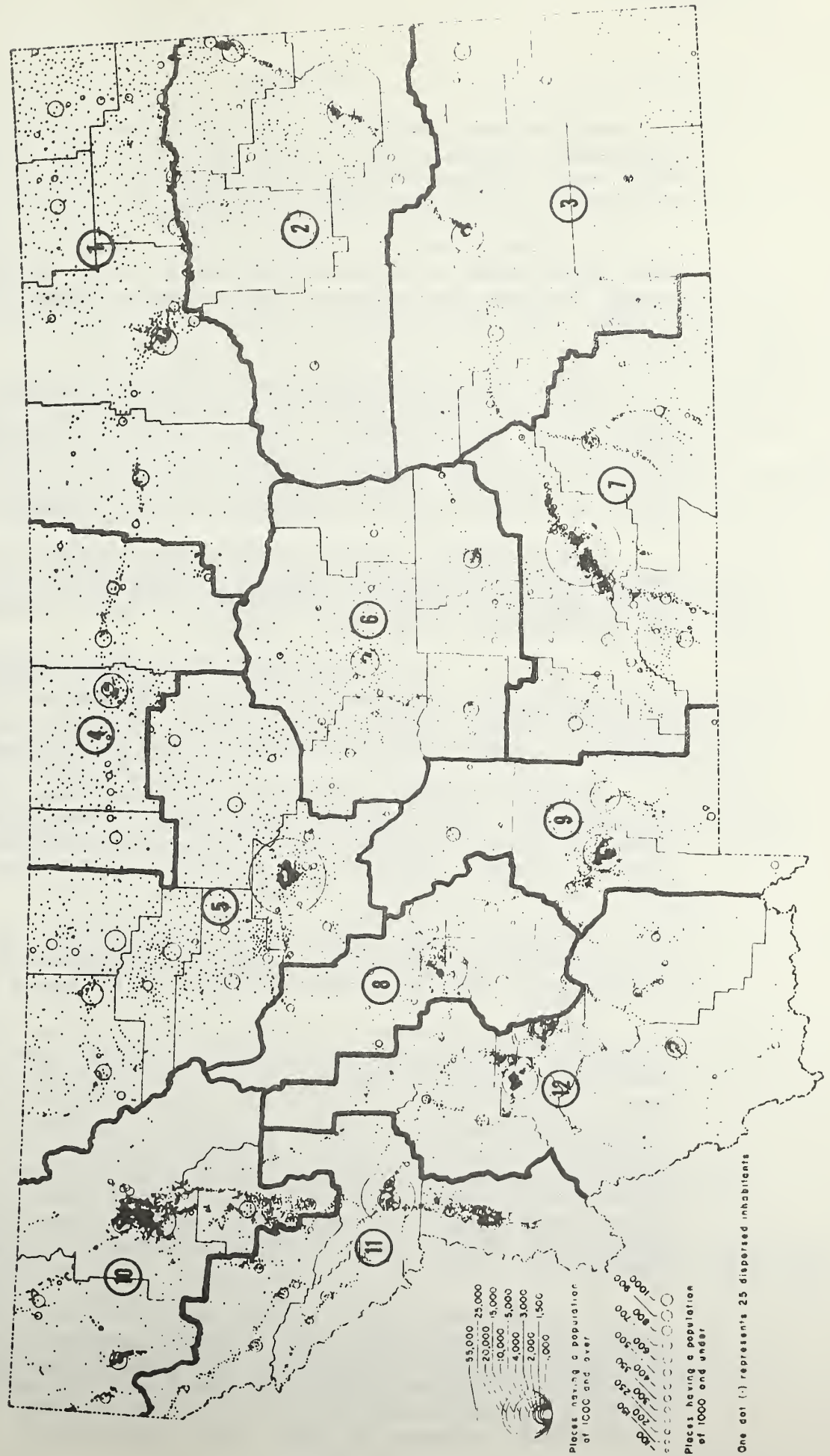
SOURCES

USDA, Weather Bureau, Summary of Climatological Data for the U.S., 1920
 USDA, Weather Bureau, Climatic Summary of the U.S., 1930, 1953
 USDC, Weather Bureau, Climate of Montana, No. 24, 1960

POPULATION

The following population summary and breakdown by counties was used for the demand computations. It is the official State of Montana 1970 census tabulation as compiled by the Montana Department of Planning and Economic Development.

PROPOSED DISTRICTS AND THE
1970 POPULATION DISTRIBUTION



History

Montana was claimed by the French as part of the Mississippi Basin in 1682, long before it was seen by white men. It was fifty years later that the first French fur traders, the Verendryes, appeared in the area.

By secret treaty of 1762, France ceded to Spain a great area known as the Louisiana Territory, of which present Montana was a part. It was retroceded to France in 1800, only to be sold by Napoleon to the United States in 1803.

Lewis and Clark were dispatched by President Thomas Jefferson in 1804 to explore the northern and western portions of the purchase. Montana's first trading post was built a year later by a fur trader. He was followed by many other fur traders and mountain men using the Missouri River and its tributaries as their highway.

Father DeSmet, Jesuit missionary, began evangelic work among the Flathead Indians in 1840. In 1841, the first permanent white settlement, St. Mary's Mission, in the Bitterroot Valley, was founded.

In 1862, a rich gold strike at Bannack brough a rush of prospectors, followed by similar strikes at Virginia City and Helena (Last Chance Gulch), bringing more gold seekers. These and other areas became busy mining camps.

Montana became a territory in May, 1864. Bannack was made the first capital, but later it was moved to Virginia City and within ten years was moved again, this time to Helena. Montana was admitted as a state in 1889, being forty-first in the Union.

The great cowboy era, with which much of the romance of the state is associated, began in 1866 with the arrival of the first herd of longhorn cattle trailed in from Texas.

Growing intrusions of white men into the Indians' homeland, the slaughter of buffalo and problems regarding treaties brought on the Indian wars of the 1860's and 1870's. These Indian troubles, which for years brought harassment to isolated sections and wagon routes, reached a climax in the Battle of the Little Bighorn River in 1876 when the entire command of General George Custer was wiped out. A year later, major Indian battles ended with the Battle of the Bear's Paw in northcentral Montana when Chief Joseph and his Nez Perce Indian band surrendered to United States troops.

In 1880 the first railroad was built into the territory and in 1883 the first northern transcontinental line was completed. The railroad exerted tremendous influence in the settlement of the state and marked the end of a colorful and flourishing river steamer trade on the Missouri between St. Louis and Fort Benton.

AGENCY ROLE AND RESPONSIBILITY

Governmental Agencies Administering Recreational Resources

A number of federal and state agencies in Montana provide either natural resource areas for recreation, or programs of funding and coordination, or a combination of both. The land resources are provided by comparatively few major agencies, while the number of programs which bear upon the provision of facilities in some way is extensive, ranging from those with a primary responsibility to those with only incidental relationships to recreation.

While the following summaries pertain to the role of all of the land management agencies, it includes only a partial listing of the broad range of programs available.

Bureau of Outdoor Recreation

The Bureau of Outdoor Recreation was established in 1962 to serve as a focal point in the Federal Government for the many activities related to outdoor recreation. The bureau's primary role concerns leadership, coordination and funding; it does not own or administer recreation resources. Its responsibilities in a broad sense are expressed through the following functions:

To develop a nationwide outdoor recreation plan which will identify needs to protect and improve the outdoor environment and to provide quality outdoor recreation resources to meet the varied and diverse needs of the American people.

To promote coordination in federal plans and programs related to outdoor recreation and preservation of the natural environment.

To assist federal, state, local and private efforts to reclaim and protect the outdoor environment and provide outdoor recreation opportunities.

The role of the Bureau of Outdoor Recreation is evidenced in Montana in many ways. One of particular importance involves joint administration with the state of the Land and Water Conservation Fund program.

Its coordinating and advisory role is also evident in the preparation and maintenance of the Montana Outdoor

Recreation Plan.

Additional joint programs are being carried out with federal, state and local agencies in Montana. These include a statewide inventory of islands, a study of the recreational scenic and wild aspects of a number of the state's major rivers, the recreational features of the Columbia - North Pacific and Missouri River Basin Studies within the state as well as preliminary aspects of the Continental Trail Program, and a joint evaluation of the recreational potential of proposed water impoundment projects in Montana.

National Park Service

National park system areas located within the boundaries of the state of Montana include all three types of areas administered by the National Park Service--natural, historic and recreational. Glacier and Yellowstone National Parks are classed as natural areas; Big Hole National Battlefield is an historic area preserving an Indian war battleground; and Big Horn Canyon National Recreation Area represents the recreational area class. In addition there are a number of historic landmark sites. These sites, often on private or state lands, have federal recognition and are national historic landmarks but are not administered by the National Park Service.

In recent years the National Park Service has adopted a new comprehensive planning concept--regional planning. The purpose of regional planning is to coordinate the efforts of all involved into a comprehensive master plan which recognizes the needs and efforts of each participant. An example is the regional approach to the problem of camping in Yellowstone Park where limitations have been established and the resulting overflow camping needs must be satisfied in areas such as those administered by the state, U. S. Forest Service, Bureau of Land Management and private lands.

Forest Service

Montana's ten national forests (and part of the Kaniksu National Forest) provide more than 16,000,000 acres of public land of vast importance to outdoor recreation. They include a great deal of Montana's most spectacular mountain scenery. Over 1,482,500 acres of the state's national forests have been classified in five wilderness areas as part of the National Wilderness Preservation System. An additional 417,000 acres, in four primitive areas, are being studied for possible addition to the system.

Variety is the keynote of outdoor recreation opportunities in the national forests. The Forest Service welcomes all types of recreation users with only minor restrictions designed to protect the public lands and provide for sound

management. There are more than 400 developed camp and picnic sites with facilities for about 4,000 family units with a capacity of over 17,000 visitors.

The Forest Service recognizes and accepts a place of major responsibility in the provision for the nation's growing outdoor recreation needs. The objective is to complement facilities provided by the state of Montana, other federal agencies and private landowners. Recreation facilities are designed to protect the national forest resources and the recreation environment. Water and sanitation facilities are provided at most campgrounds. Emphasis is on aesthetic values rather than luxury items.

Bureau of Land Management

The 8,300,000 acres of land under the jurisdiction of the Bureau of Land Management in Montana are of value to residents and visitors alike for a wide variety of outdoor recreation activities. Among many recreational uses made of these public lands in Montana are fishing, hunting, picnicking, camping, rock hounding and photography. One of the great attractions is simply open space.

Some tracts of public land are located near towns or along drainages where most other space is occupied. Such tracts have value for development as municipal, county or state parks under the provisions of the Recreation and Public Purposes Act. Nonprofit associations may also participate in this program.

With the expansion of the multiple use resource development program, a number of recreation projects have been completed and others are planned.

Whenever possible, land exchanges are made to acquire recreational sites as well as hunting and fishing access and to achieve a better consolidation of public lands for hunting or general outdoor recreation. Increased emphasis will be given to natural environment considerations within the various activities of the bureau. To the extent possible, archeological protection and interpretation will be carried out, also.

Bureau of Reclamation

The Bureau of Reclamation of the Department of the Interior controls a sizable acreage of land in Montana at the various facilities planned or constructed for irrigation, flood control and power production.

The recreation potential of reclamation lands, particularly those that are water oriented at multipurpose reservoirs, is becoming increasingly evident. Although the bureau does not have authority or funds to develop recreation

facilities on these lands, it has made the land and water areas available to other federal and state agencies for administration and development. A management plan has been prepared for each reservoir area delineating the responsibilities of the various cooperating agencies. The bureau has also shared in the cost of providing minimum basic health and safety facilities in the recreation areas.

Bureau of Sport Fisheries and Wildlife

All areas of the National Wildlife Refuge System and the National Fish Hatchery System are dedicated to improving recreation through the welfare and enhancement of fish and wildlife values. The greatest contribution of fish and wildlife special purpose areas is to foster those recreational activities associated directly with fish and wildlife in their habitat. To achieve this objective, consideration is first given those appropriate public recreational uses which are directly associated with public enjoyment by the observation, utilization, interpretation and understanding of fish and wildlife populations, habitat and conservation values.

A current inventory for Montana lists seven refuges totaling 143,700 acres and two wildlife ranges containing 1,113,500 acres.

Corps of Engineers

Through joint planning and participation with federal, state and local agencies, the Corps of Engineers is making available new areas for outdoor recreation.

In Montana the major projects developed by the corps consist of the Fort Peck Reservoir and Libby Dam and Reservoir currently being constructed. Fishing, boating, water skiing, picnicking, swimming and camping are major outdoor activities in this large and picturesque area.

The impoundment which will be formed by the completion of the Libby Dam on the Kootenai River will provide major recreation opportunities. As it is virtually surrounded by the Kootenai National Forest, it is planned that the U. S. Forest Service will provide the necessary recreation facilities.

Bureau of Indian Affairs

The role of the Bureau of Indian Affairs in the recreational development of Montana reservations is essentially to obtain for the Indians professional assistance and expertise which will aid them in making wise decisions relative to the planning and development of their recreational resources.

The seven Indian Reservations in Montana comprise an area in excess of eight million acres, of which more than five million is Indian trust land. Much of this acreage can be considered potential for some form of outdoor recreational use. However, since Indian land is considered to be privately owned, development of any programs on these lands requires the concurrence of the tribal government.

Department of Housing and Urban Development

The many programs sponsored by the Department of Housing and Urban Development (HUD) have a significant bearing upon recreational and environmental resources of the state with major emphasis upon the quality of urban living.

This department makes available a number of sources of funding. These include projects for recreational facilities such as community swimming pools, historic preservation projects, model neighborhood demonstrations with significant reference to recreational services and open space land programs. Also included are services to help communities create parks in built up areas as well as urban beautification and improvement projects. A further important funding program consists of city planning projects. It is coordinated in Montana by the State Department of Planning and Economic Development. A number of cities are taking advantage of this program.

Office of Economic Opportunity

Important community action programs are carried out under the auspices of this agency. Programs such as the Job Corps often benefit recreation directly as when facilities are constructed or improvements made to recreation areas. The programs which provide for training in vocational skills and basic education are, in Montana, often carried out in camps situated in pleasing recreational environments, thus affording this kind of experience to some who may not otherwise have had such an opportunity.

Much of the local administration of these camps is carried out by U. S. Forest Service personnel. Enhancement of recreation resources is provided through training of the Job Corps personnel.

Soil Conservation Service

The Soil Conservation Service fulfills an important responsibility in helping landowners, individually and in groups, plan and establish income-producing recreation enterprises. By furnishing facilities for the enjoyment of nature such as boating, camping, hiking, fishing and hunting, rural people will have new sources of income. This will in turn provide opportunities for relaxation,

education and enjoyment for people from the urban areas.

Recreational land use is encouraged by the Soil Conservation Service in several ways:

1. Technical and financial assistance to farmers, ranchers and other owners of nonfederal rural lands through soil conservation districts.
2. Cooperation and assistance to watershed protection projects and resource conservation and development projects in planning wildlife and recreation facilities.
3. Assisting individuals, groups and government agencies and their consultants in evaluating local needs and potential developments.

Recreation potential inventories are being completed for each county in Montana in cooperation with state and federal agency representatives. These inventories will be followed by a statewide inventory to provide basic information in resource conservation to soil conservation districts, counties, towns and planning commissions for comprehensive planning.

Detailed soil surveys are made and interpreted to provide special information needed in establishing recreation developments.

Wildlife and recreation developments are considered when developing a complete conservation plan for each farm and ranch cooperating with local soil and water conservation districts.

Bureau of Public Roads

The Bureau of Public Roads (BPR) has supervision of federal aid highway fund expenditures, including guidance and approval of various states involved in planning, programming, design and construction.

Environmental factors, including coordination of highway planning with recreation and social and economic needs, are all part of the required planning procedures for highway locations. Recently established regulations govern location of utilities in a scenic park or recreation area if aesthetics are damaged by such occupancy. The bureau encourages coordinated planning with other agencies to integrate highway design and location with recreational areas. Meetings are held with state and federal agencies to prepare advance schedules of activities by these various agencies.

The coordinated approach involves the use of a master

planning map which shows the location of proposed developments by state and other agencies. Included are such facilities as park and recreation areas, road construction on other than federally aided road systems, dam sites and power transmission facilities.

Federal Water Pollution Control Administration

The Federal Water Pollution Control Administration was established by the Water Quality Act of 1965. Its long range goal is to assure an adequate supply of water suitable in quality for all legitimate uses, including recreational, municipal, industrial and agricultural, as well as for the propagation of fish and wildlife.

In carrying out these objectives the Federal Water Pollution Control Administration conducts the following programs which bear directly or indirectly on environmental aspects of outdoor recreation:

Participation with the states in the establishment of water quality standards.

Development of water pollution control programs on a river basin scope.

Provision of grants to municipalities for construction of waste treatment works.

Provision of grants to aid in training, research and demonstration projects in the field of water pollution control.

Public Health Service

The recent establishment of a national center for urban and industrial health has brought together numerous programs, some of which have an important bearing on recreation and its associated environment. Among those concerns most closely allied with recreation are the purity of drinking water and the disposal of solid wastes without causing health hazards or water or air pollution. In all of these functions the Public Health Service works closely with the State Department of Health as well as other involved public agencies and private enterprises in Montana. Concern for aspects of the total environment is evidenced by the attention to use of pesticides and by the coordinated planning with the state for a nationwide seminar on the relationships of pesticides to public health.

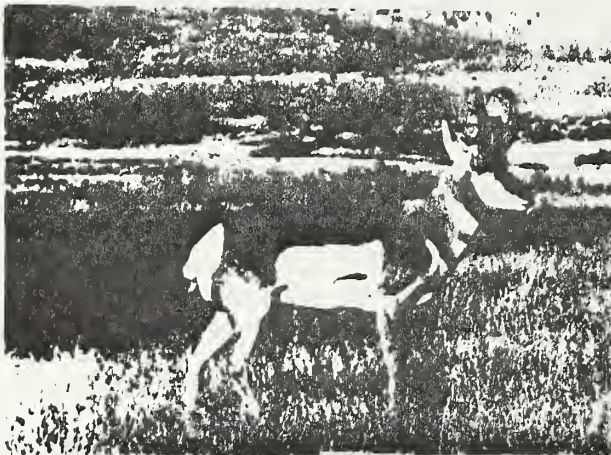
Geological Survey

The Geological Survey is involved in Montana and other states in which primitive areas are being studied

for reclassification to wilderness under the National Wilderness Preservation Act. This agency is aiding in the assessment of mineral values in these areas as a part of the wide range programs of field and laboratory research in geology to determine and appraise the mineral and mineral fuel resources and geologic structure across the nation. In addition to the evaluation of wilderness these studies provide scientific and technical assistance in a number of fields, including other aspects of recreation.

Recreation Responsibility of State Fish and Game Commission

The Montana Fish and Game Commission has the primary responsibility in the state for outdoor recreation. Having been officially named as the state recreation agency, the commission has undertaken the responsibilities connected with this assignment. This involves the preparation and maintenance of the statewide outdoor recreation plan. This



Big game add much to the enjoyment of many forms of outdoor recreation in Montana.

planning function includes the duty to evaluate the total outdoor recreation environment, to inventory the resource supply, determine the demand, delineate the needs, point out special problems and recommend solutions. This is not an authoritarian role, but one of suggestion and recommendation.

The commission has control only over the programs under its administration which, however, in total provide a significant amount of the outdoor recreation opportunities offered in Montana. Criteria established by the commission for federal cost sharing under the Land and Water Conservation Fund provide guidelines for local agencies that desire to participate in this program.

The commission administers the state park system, of which there are forty-three units comprised of 18,600 acres. The fishing access site program is also a major contribution to outdoor recreation. There are ninety-seven individual areas and 5,200 acres, nearly all of which have at least minimum development for recreation. Details of these two programs can be found in the appendix. The type of development in these areas is limited to basic facilities. The enjoyment of the visitor is dependent upon the natural beauty of the setting, the element of privacy provided by adequate spacing and the allied activities available rather than the provision of intensive development.

Under the cost sharing provision of Public Law 89-72 (National Water Resources Act) the commission has the opportunity to participate in the provision of recreation facilities on federally administered water areas. The commission has expressed an interest in this program on several occasions and has signed the necessary documents to accomplish one such project. On major federal water storage projects the commission's cost sharing obligations would be heavy, quite possibly in excess of its financial capabilities to participate fully. Other state and local agencies may also participate in this program if they desire.

The commission is responsible for management of the fish and wildlife resource. In a state such as Montana with its sparse human population and extensive habitat for a wide variety of species for fish and game, the recreation provided by hunting and fishing, as well as seeing and photographing wildlife, is a highly significant part of the outdoor recreation resource.

The commission is also active in the field of historic preservation with the administration of state monuments and recent designation as the agency to administer the National Historic Sites Preservation Act. Development and interpretation of these areas adds to the total outdoor recreation opportunities available in Montana.

Montana Highway Commission

The Montana Highway Commission is concerned with outdoor recreation assets of the state and considers enhancement of recreation activities along with the major responsibility of developing and maintaining an adequate system of highways in Montana.

The Montana Highway Department has constructed thirty-six rest areas. These are located at convenient intervals along interstate and primary highways to ease the traveler's fatigue and provide a place to picnic and relax. The department expects to build some twenty-five more rest

The State Water Resources Board is, by law, Montana's representative in negotiations between the various states and the Federal Government on agreements or compacts regarding interstate waters. The board's staff participates in the Missouri Basin and the Columbia-North Pacific studies through membership on work groups and task forces and furnishes information on water and water development to other agencies who are involved in river basin planning.

Department of State Lands and Investments

The state owned lands, especially those designated in the several grants, are held in trust for the support of education and for the attainment of other worthy objects helpful to the well-being of the people of the state. Over 5,000,000 acres are under the jurisdiction of the Department of State Lands and Investments.

The Office of the State Forester is responsible for the management of approximately 491,000 acres of state owned classified forest land. This management employs the multiple use concept, to make the most judicious use of the land for some or all the resources and related services.

Through these forested areas hundreds of miles of roads and trails are utilized by recreationists. Over 1,600 acres of these state lands are water with related recreational uses. Hundreds of miles of fishing streams traverse these areas. Many hunters find their game on state forest land.

The rapidly increasing demand by the general public for spaces on which to set tents and build campfires has literally forced the state forester to provide suitable camp and picnic areas on state forests as a device for forest fire protection.

Special use authorizations on state forest land have been made. Half of the classified forest land is blocked into seven state forests. These forests are interspersed with privately owned, and in some cases, federally owned land. The balance of the state forest land is scattered primarily in Sections 16 and 36 of the various townships.

The scattered nature of state forest land provides a variety of recreational opportunities. However, the inability of recreationists to identify the state owned forest land and the expensive administrative problems inherent in this scattered ownership are a basis for consolidating the lands within the presently established state forests and designating new forests east of the Continental Divide.

With adequate safeguards against fire, littering,

areas on interstates in the next five years, most of them in pairs (on either side of four-lane roads).

The commission is cooperating with the Fish and Game Commission in locating highways so as to preserve streams and scenic areas. It is also building roads to recently created impoundments in order for the public to take advantage of water based recreation. There are in addition many fishing, swimming and boating access possibilities along existing highways.

A cooperative program of interstate lake construction is receiving special attention at this time. Efforts are being made to locate desirable areas in the eastern part of the state where interstate fills might serve as dams, which would in turn develop recreation lakes immediately adjacent to the highway. The State Highway Commission and the State Fish and Game Commission, along with the Bureau of Public Roads, are cooperating in this important program.

Montana Water Resources Board

The Water Resources Board is the legally designated agency to coordinate all water programs in Montana and is required to prepare a comprehensive multipurpose state water plan. This plan will provide guidelines for the development and conservation of water and related land resources in Montana for the next fifty years.

Since its establishment, the board has engaged in the construction of water projects designed to fulfill the needs of Montana users. It is the responsibility of the board, along with the project users, to operate and maintain these projects during their useful life.

Through financial and other assistance obtained from the Fish and Game Commission and the Bureau of Outdoor Recreation, the Water Resources Board has established a long-term program of recreational development on many of its major reservoirs. The board has also entered into leases and other arrangements with the Fish and Game Commission to develop and administer the recreation facilities.

The Water Resources Board is the agency which authorizes and regulates weather modification in Montana. This includes licensing of persons and firms who propose to engage in weather modification as well as to study the need and possible impact of weather modification in any area.

The Water Resources Board cooperates with the U. S. Geological Survey in a program to measure stream discharge, water quality and sediment content.

vandalism and various forms of trespass, it may be possible to fully develop the recreational potential of the state forests.

State Soil Conservation Committee

The State Soil Conservation Committee is involved in outdoor recreation primarily as it gives assistance, counsel and guidance as available to soil and water conservation districts in carrying out and coordinating its programs and activities.

Soil and water conservation districts being local entities of state government are responsible for planning and carrying out a soil, water and related natural resource conservation program on private lands. This is done mainly through agreements with cooperating landholders. Districts provide assistance as available to landowners on request in developing farm, ranch or other conservation plans which may include recreation enterprises or recreation related land uses. Districts usually receive the cooperation of supporting and assisting agencies.

Soil and water conservation districts in Montana are authorized to plan, build and maintain multiple purpose resource projects which may include recreation benefits.

Montana Extension Service

The Montana Extension Service works as a unit of the College of Agriculture of the Montana State University. The Extension Service contributes to recreation programs in many ways. It encourages involvement and participation in a variety of resource development programs including recreation projects. Other activities include exploring with groups and individuals proposed projects and furnishing information on available sources of technical assistance and appropriate funding sources. This frequently includes information on financing possibilities for recreation projects particularly that relate to private enterprise.

Extension personnel play an important role in county Technical Action Panels. Outdoor recreation presents an important subject for consideration in their programs. The Extension Service is presently developing a feasibility guide for individual landholder analysis of potential resource projects, including recreation. The Recreation Subcommittee of the Rural Area Development Program is strengthened by state extension participation. In this regard it is supported by the efforts of the field staff in working with local and county resource groups.

State Department of Health

Health oriented matters coincident with tourism are

assigned to the State Department of Health. Sanitation of public and private facilities directly related to housing and food service are of most concern to the traveling public. Other items of concern arising from these functions, and in some instances from the tourist themselves, are related to the protection of public water supplies, proper waste water disposal, water pollution control, adequate solid waste disposal, insect and rodent control and reduction of air pollution.

Laws and regulations concerning the health and welfare of the public administered by the State Department of Health require public facilities to be designed and operated so as to protect the health of the citizens of the state as well as the traveling public. The instruments of legal control of recreational areas are licensing, inspection, education and enforcement.

The department will play an increasingly greater role in matters of the total environment as evidenced by the concern for the use and control of pesticides. The department cooperates with the U. S. Public Health Service and coordinated planning is being done for a national seminar on pesticides and public health to be held in Montana. The department is conducting a sixteen-month study on the use of pesticides with a grant from the U. S. Public Health Service.

1971 MONTANA OUTDOOR RECREATION SURVEYS

Plan Methodology

Demand and Use Surveys

Two surveys were conducted in 1971. The first was to gain insight into the desirable characteristics of campgrounds and to ascertain the use patterns and characteristics of recreationists actually using campgrounds and recreation areas throughout Montana. It was completed during the months of June, July and August of 1971. The second was a resident demand survey carried on over a 12 month period from February 1971 through January 1972. It was conducted in order to determine how residents of Montana, users and non-users of outdoor recreation facilities, spend their leisure time, and what recreation activities they participate in, where they prefer to recreate, ie. to obtain an estimation of demand.

The recreational preferences and needs of Montana's citizens and visitors have been studied in the past on a very limited basis. Estimates of demand for various types and quantities of outdoor recreation have been based, of necessity, upon small sample surveys of residents and nonresidents. Sample survey findings were expanded to statewide size through the use of supplementary data obtained from Montana Highway Commission studies of relatively small numbers of non-randomly selected travelers.

Previous studies have concentrated on the types of outdoor recreation activities persons engaged in and their frequency of participation. Demand in activity days was estimated

through extrapolations of the current participation rates for the various activities. Supply estimates were based upon partial inventories of facilities. Then, supply and demand were compared with either surplus or deficits resulting.

The present recreation plan for Montana is unique for the State because, for the first time, a major study of consumer recreation preferences is an integral part of the overall research design and recreation plan. In addition, user characteristics are determined. Finally, through the inclusion of sites as an area of investigation, activity mixes, user characteristics, and site characteristics provide a new dimension of data for analysis.

The current Statewide Outdoor Recreation Planning Agreement between the Bureau of Outdoor Recreation and the Montana Fish and Game Department provided funds for an updating of the 1969 Plan to develop a truly comprehensive approach to planning, to find the proper relationship between outdoor recreation and environmental considerations, and to work toward the consolidation of efforts leading to a statewide strategy for implementing the statewide recreation plan. The planning program is organized within the framework of determination of availability and sufficiency of supply; determination of needs; identification of user characteristics; and the development of five-year implementation program.

Two pilot projects were carried out prior to running the full surveys. The major reasons for designing and conducting the pilot projects were to provide the Montana Fish and Game Department--the principal outdoor recreation planning agency of the State--with an appropriate methodology, as tested in

pilot studies to: (1) determine the various types of demand in existence in the State and, (2) describe the demographic characteristics of participants and nonparticipants in outdoor recreation. The pilot projects were designed to establish the methodology for determining motives, attitudes, preferences, and levels of satisfaction of outdoor recreation participants and comparable attitudes and preferences of nonparticipants, where applicable.

As a result of obtaining data in these areas of human behavior, the Department of Fish and Game will have information to assist it in making more effective and efficient decisions affecting outdoor recreation participants in Montana. Uses for the information include, but are not limited to, determining the recreation activity mixes for planning regions and recreation sites, optimizing locations for sites, and ascertaining trends in consumer demand for outdoor recreation activities and facilities. Other specific applications will be indicated in following sections of the report.

Findings of Pilot Studies

Several broad, major findings from the summer, 1970, pilot studies phase of research were:

The basic methodology utilized in gathering data by sampling (the general resident survey) and direct questionnaire distribution (the recreation area survey) is workable and provides optimum statistical efficiency. The methodology was proven feasible, with various modifications resulting from the pilot studies. The Department of Fish and Game, by following the recommendations provided herein, acquired data which are

valid and reliable. That is, the designs measure reality and are statistically reproducible.

A general statewide mail distribution of questionnaires was feasible. Statewide mailings were made from a systematic random sample of names and addresses provided by the State Board of Equalization drawn from income tax returns filed with the State. The random sample mailings were made on or about the first of each month over a 12-months' period at the rate of approximately 1050 items per month. Followup mailings to nonrespondents during a given month were made at intervals of 14 to 21 days after the initial monthly mailings. When combined with the followup mailing, one method tested in the pilot studies provided a total return of approximately 60 percent. Of the remaining 40 percent, approximately one-half of the questionnaires were not delivered, according to nonrespondents who were contacted by telephone. By comparing the values obtained from these accountable nonrespondents along with the remainder of the nonrespondents, it does not appear that they are significantly different from those obtained from the respondents. Thus, the nonresponse factor does not appear to be a serious problem that would significantly bias survey findings.

The recreation area pilot study indicates the most productive method of obtaining data was to obtain names and addresses of recreation participants at the recreation sites through out Montana, with questionnaires subsequently mailed to these persons for completion and return. A significant difference in response rates was obtained when testing various methods of questionnaire

distribution at the sites. The recommended method of distribution provided a response rate of approximately 70 percent, according to the pilot survey.

Overall, a considerable fund of good will existed as demonstrated by the two major surveys. Respondent interest and cooperation were readily apparent. Considering that the major pilot studies were conducted during a period of economic recession and severe social unrest within the United States (1971), this interest and cooperation were gratifying. It seems likely that this public attitude will facilitate execution of the main projects.

The pilot studies participated in by public and semi-public welfare agencies produced unsatisfactory results--reflecting (1) a lack of cooperation and (2) use of questionnaires to expound upon social criticism irrelevant to the objectives outlined in the study.

Recommended Methodology For the Surveys

Three types of pilot studies were conducted during 1970 by the consultants in cooperation and consultation with the Montana Fish and Game Department. (1) The first of these was a site study aimed at users of parks and recreation areas administered by various levels of government. (2) A second pilot study consisted of a mailing of questionnaires to households, users and nonusers, randomly selected from Montana income tax files. (3) A third test was conducted to determine a feasible method for obtaining information from individuals and families which the consultants' and others'

perceived as having limited opportunities to engage in the usual forms of outdoor recreation.

As a brief explanation of the nature of data gathered, it may be of value to define several terms and concepts used in describing the type of data collected: motives, attitudes, preferences, and levels of satisfaction.

Motives are certain patterns of behavior that are perceived as being successful in satisfying needs. They are, in part, influencers of behavior, along with numerous other variables. To answer the question of why people engage in various outdoor recreation pursuits as well as where, one attempts to ascertain both motivation and those factors and conditions which enable them to participate in outdoor recreation activities.

Attitudes are basic orientations for or against phenomena. There are three major components of attitudes: the cognitive element (information or beliefs about some phenomenon), the affective state (feelings of like or dislike), and the behavioral predisposition (tendencies to act or the learned responses). The study of attitudes is an attempt to determine what persons like (or dislike) and, subsequently, may be expected to do in the future.

Preferences are what individuals desire to do, and implicitly, involve a ranking of choices based upon satisfactions expected from one choice or activity as compared to others. The pilot studies were designed to elicit not only what participants were doing in outdoor recreation but also what they desired to do in the future. It should be noted that knowledge of past behavior alone is not sufficient to predict future behavior.

Finally, levels of satisfaction arise from previous experiences and are the result of the degree of pleasure derived from recreation. Standards or norms of satisfaction derived from various forms of outdoor recreation activities are needed for successful planning. Data obtained on this subject are of critical importance in developing such standards. Furthermore, research data will make it possible to compare and contrast the satisfaction content of the various types of outdoor recreation activities and to rank them. Lastly, knowledge of each site's facilities and activity potentials coupled with a determination of what users do at the site, their level of satisfaction, and their preferences, provide for the evaluation and analysis of specific sites relative to established standards or norms. Ultimately, recreation planners may change the configuration of recreation activities at sites as well as develop a methodology for site location and design capacity with this type of information.

Three pilot studies were deemed necessary for obtaining the types of data needed. (1) The site survey of parks and recreation areas provided data about users of developed recreation resources in the State of Montana. Furthermore, it reflected the views of nonresident participants as well as residents. (2) The general statewide survey of residents was needed to determine behavioral and demographic data for the Montana population. It produced information not only about users of parks and recreation areas, but also data for those persons who engaged in outdoor recreation but did not go to established parks and recreation areas as well as information

about those who do not engage in outdoor recreation.

(3) Finally, pilot studies were needed for those persons perceived as having severely limited outdoor recreational opportunities. These studies consisted of questionnaire surveys of individuals utilizing the services of public or semi-public welfare agencies. Limitations on outdoor recreation participation, it was speculated, could arise from relatively low incomes and/or because of physical handicaps. The questionnaire surveys were administered by officials or employees of welfare agencies, but many filling out their questionnaires were students and not a true indicator of this segment!

The three studies provided a different perspective of those engaging in outdoor recreation in Montana: the resident and the nonresident, the user of developed facilities and those who recreate in undeveloped areas, and persons possessing relatively unlimited recreational opportunities contrasted to those with limitations in opportunities. The three studies, together, provided a comprehensive and complete picture which represents all of the people of Montana and most of the visitors from other states and countries.

THE RECREATION AREA SURVEY METHODOLOGY

The recreation site survey conducted by the Fish and Game Department of Montana provided data about resident and nonresident user characteristics and certain data about the sites. Specifically, the design elicited data about why visitors chose specific recreation areas or sites. Such data reflected motivation of users. The attitudes of users was determined along with their levels of satisfaction as derived from recreating at specific sites. Finally, user preferences for types of recreation and facilities was brought out in the site survey.

The site study methodology was organized into five parts: (1) the questionnaire, (2) methods for distributing questionnaires and their ultimate return, (3) editing procedures, (4) coding procedures, and (5) the presentation format for data.

The Questionnaire

After comprehensive testing of methodology and the incorporation of revisions, the consultants recommended the following questionnaire and cover letter, which were used for the 1971, summer, Recreation Area Survey:

MONTANA RECREATION AREA SURVEY

Instructions: Most of the following questions are about the Montana recreation area listed below which you were using when this questionnaire was left at your vehicle or when you were contacted:

Montana Recreation Area

Date

Please fill out this questionnaire when you return home from the trip or have left this recreation area. Many of the questions can be answered by checking a statement that most accurately describes your thoughts about the question. Your answers are confidential. Please return your completed questionnaire in the enclosed addressed, postage-paid envelope. Thank you for your time and effort.

1. How long were you at this recreation site?

- | | |
|---|--|
| <input type="checkbox"/> One day or less, but not overnight | <input type="checkbox"/> More than two nights but less than seven nights |
| <input type="checkbox"/> Overnight | |
| <input type="checkbox"/> Two nights | <input type="checkbox"/> Seven nights or more |

2. What type of sleeping accommodations did you use while at this recreation site? (If more than one type, check the one most frequently used.)

- | | | |
|---|---|---|
| <input type="checkbox"/> None, did not stay overnight | <input type="checkbox"/> Camper | <input type="checkbox"/> Other -- please explain: _____ |
| <input type="checkbox"/> Travel trailer | <input type="checkbox"/> Tent | |
| | <input type="checkbox"/> Slept out-of-doors | |

3. Why did you choose to use this particular recreation area? (Check more than one answer if needed.)

- | | |
|--|---|
| <input type="checkbox"/> Near home | <input type="checkbox"/> Near some desired activity (such as swimming, boating, picnicking, etc.) |
| <input type="checkbox"/> Convenient to highway | |
| <input type="checkbox"/> Natural beauty | <input type="checkbox"/> Other reason -- please explain: _____ |
| <input type="checkbox"/> Recommended by friends or relatives | |

PAGE 1 (of questionnaire)

4. Please check the adequacy of facilities at this recreation area.

Facilities	Did Not Use or Were Not Available	Adequacy of Facilities Used				
		Excellent	Good	Average	Poor	Very Poor
1. Picnic Table						
2. Fireplace						
3. Toilet						
4. Boat Ramp						
5. Swimming Beach						
6. Firewood						
7. Drinking Water						
8. Garbage Cans						
9. Automobile Parking						
10. Site for Camping Vehicle or Tent						
11. Other -- please explain:						

5. Are there any types of outdoor recreation activities or facilities you would like at this recreation area which are not presently available?

() Yes () No

IF YES, what activities or facilities should be provided at this area?

6. Please evaluate environmental factors you found in this recreation area.

Environmental Factors	Condition of Environmental Factors				
	Excellent	Good	Average	Poor	Very Poor
1. Sufficient privacy					
2. Sufficient space					
3. Neat & clean, well maintained					
4. Natural beauty of area					
5. Accessibility to this area					
6. Convenience of facilities					
7. Other -- please explain:					

PAGE 2 (of questionnaire)

7. Please check how often you or other members of your party engaged in each of the activities listed below while based at this recreation area. (If no one in your party engaged in an activity while at this recreation area, please leave that line blank.)

Recreation Activities	Frequency		
	1 Time	2 to 4 Times	5 Times or More
1. Bicycling			
2. Motor Bike Riding			
3. Boating (with motor)			
4. Camping -- Count each day at site as one time			
5. Driving for pleasure			
6. Back Country -- 4-wheel Touring drive etc.			
7. Fishing			
8. Hiking			
9. Mountain Climbing			
10. Picnicking			
11. Playing Outdoor Games			
12. Resting and Relaxing			
13. Rock Hounding			
14. Sightseeing			
15. Swimming			
16. Walking for Pleasure			
17. Water Skiing			
18. Other Pursuits (nature study, etc.) Please indicate:			

8. If you or others in your party engaged in any of the above activities, while based at this area, please write the number of the activity that was enjoyed most, second and third choices.

(____) First preference (Activity Enjoyed Most)

(____) Second preference

(____) Third preference

PAGE 3 (of questionnaire)

9. Including yourself, please write the number of adults, teenagers, and preteens in your group.

_____	Number of Adults	_____	Number of Teenagers	_____	Number of Preteens
-------	---------------------	-------	------------------------	-------	-----------------------

10. Please write the name of your home state, county, and city or town.

_____	State	_____	County	_____	City or Town
-------	-------	-------	--------	-------	--------------

11. If you are interested in outdoor recreation, what geographic areas in Montana do you enjoy most or what areas would you like to visit?
(Examples include: Flathead Lake, Lower Yellowstone River, etc.)

12. What is your opinion of outdoor recreation in Montana? Please tell us what you consider being done well or badly and especially what improvements not previously indicated you believe are needed.

Thank you for your assistance in planning Montana's future outdoor recreation opportunities. Please return the questionnaire in the enclosed postage-paid envelope to Recreation and Parks Division, Montana Fish and Game Department, Helena, Montana 59601.

Upon completion of the survey, it was determined that approximately 4050 recreation area survey questionnaires were distributed to participant recreationists; of these, roughly 2400 were returned from both Montana residents and nonresidents for a 60 percent return rate, an excellent response.

Basically, the questionnaire provided for the acquisition of the following types of data:

1. Location of the recreation area--from which the specific site, planning regions, and counties can be determined (classification data for sites).

2. Date of distribution or contact with the recreation party.

3. Number of days, or fraction of day, spent at the recreation site (general classification data and level of satisfaction data).

4. Type of sleeping accommodations, if any, used at the site (general classification data).

5. Reasons why persons selected the particular site (motivation data).

6. User evaluation of facilities at the site (attitudes and levels of satisfaction data).

7. Additional recreation activities or facilities, if any, users would like to have available at the site (preferences and levels of satisfaction data).

8. User evaluation of the environmental factors of the recreation area (attitudes and levels of satisfaction data).

9. Outdoor activities engaged in and frequency by

members of the party (general classification data and some limited preferences data).

10. Preferences and rankings of outdoor recreation activities (preferences data).

11. Number of persons in the party and composition of party by broad age groups (general classification data).

12. Place of residence of travel party by state, county, and city (general classification data).

13. Geographic areas most enjoyed for outdoor recreation (preferences data).

14. Evaluation of outdoor recreation opportunities in Montana including citations of the good and bad; also where improvements are believed needed (attitudes data).

Based upon the pilot test at recreation sites in which alternative questionnaires were evaluated along with varying distribution methods, it was anticipated that the response rate would be between 60 percent to 70 percent for the questionnaires mailed to persons whose names and addresses were obtained at the recreation areas and a response rate of approximately 25 percent to 35 percent for those questionnaires left at unattended vehicles or unoccupied tents or camp sites.

Method of Distribution

The basic method of distribution involved an interviewer making a census of campgrounds and recreation areas. He obtained names and addresses from each recreation party at a recreation area, and, for those vehicles which are unattended in day use areas or campsites in which the users are temporarily absent, he left a questionnaire. In the first instance, the

questionnaire was mailed to someone within the recreation party (generally, the presumed head-of-household). The questionnaire was mailed within a relatively short period of time after the canvass was made. The bulk of questionnaires were distributed in this manner. In the second case, the questionnaire was returned by someone in the recreation party who was not contacted personally. (Piolt study findings indicated the likelihood that the questionnaire will be returned by the head-of-household or spouse.) In both instances, questionnaires were returned by mail. Only the method of distribution varied.

It was recommended that both federal and state outdoor recreation areas be included in the summer survey, 1971. Federal sites included Glacier National Park and the Big Horn Canyon National Recreation Area, U. S. Forest Service campgrounds and sites, Bureau of Land Management recreation areas, Army Corps of Engineers sites, and the Bureau of Sport Fisheries and Wildlife areas. All State parks and recreation areas including fishing access areas State monuments, and the like were included.

A complete listing of specific sites was prepared and the number of sites included in the survey was 276. Only 18 of these were in the eastern part of the state indicating a lack of recreation facilities of this type. All sites were visited randomly as they were encountered on preplanned circuits. Three "interviewers" were employed to cover 14 circuits. Two worked the western third of the state, one the eastern two-thirds. Each campground or recreation area was visited three times on the average.

METHODOLOGY OF PILOT STUDIES

The recreation site pilot study was conducted during the summer of 1970 around Flathead Lake and in the Swan-Clearwater River drainages of Western Montana. Selection of these areas was based upon the heavy summertime use by both residents and nonresidents and because of the close proximity of camp grounds to one another--resulting in a substantial economy of time and travel expense.

The consultants personally distributed the questionnaires and talked with recreationists where appropriate. Three different methods of questionnaire distribution were tested. Also, two different forms of the questionnaire were tried to determine if length of questionnaires affected rates of response. The first method of distribution involved placing the questionnaire along with a cover letter and return postage-paid envelope at a campsite at which the camping party was temporarily absent. Unoccupied vehicles were also included. This procedure was used when no campers or recreationists were present, thus making an explanation of the project impossible. The second method of distribution

required giving a personal explanation of the project to the recreation party. The cooperation of campers was solicited with the request that they return the questionnaire left with them upon returning home. In this case, the cover letter and return envelope along with the questionnaires were given to the recreation area visitors. The third method involved obtaining names and addresses of campers for later mailing of questionnaires. Their cooperation was obtained by a promise on their part to complete the questionnaires and mail them to the Fish and Game Department.

Both a long form and a short form version of the questionnaire were used. The long form contained approximately two pages of open-end questions that were absent from the short form. The long version of the recreation site questionnaire and cover letter are shown on pages 15.4 through 15.11. The short questionnaire is identical to the long except it does not include questions 14-18.

Other methods of collecting data were thoroughly evaluated as to appropriateness for the site survey. Obviously, telephone interviewing would be impractical along with observation techniques. Personal interviewing was considered unsuitable because interviews would be made during the various stages of the users' visits to the recreation areas, i.e., just after arrival, during the visit, and at the time of departure. The nature of the study required a measurement of the total recreation experience, not a part, so personal interviews were not employed.

Prior to actual site surveying, questionnaires were tested by University of Montana students and were reviewed by members of

the Montana Fish and Game Department. Various criticisms resulted in changes of the questionnaires subsequently tested in the site pilot survey.

Table 15.1, below, provides the return rates for the various methods of distribution and for the long and short forms of the questionnaires:

TABLE 15.1
RECREATION SITE RATES OF RETURN

Method of Distribution	Combined Percent Returned	Length of Questionnaire					
		Long Form			Short Form		
		Number Left	Number Re-turned	% Re-turned	Number Left	Number Re-turned	% Re-turned
Questionnaire left with no explanation	38%	150	60	40%	50	16	38%
Questionnaire left with explanation	53%	150	72	48%	50	33	53%
Secured names and addresses only	72%	100	72	72%			
Combined percentage				51%			49%

To determine the statistical significance of the differing rates of return reported in the above table, the standard error of a percentage was computed using the formula:

$$Sp = \sqrt{\frac{p \cdot q}{n}}$$

When:

p = percent returned

q = percent not returned

n = number distributed

Since the number of forms used was different, whether one considers rows or columns, computations were based upon the smaller of the two being compared. This is a choice in the direction of conservatism, i.e., not finding a difference to be more significant than it really is. Solving for 2 standard errors, or 95% confidence of detecting a significant difference in the two forms of the questionnaire, the computation is:

$$Sp = 2 \sqrt{\frac{(49)(51)}{100}} = \pm 10$$

If the difference in the percentage returned had been greater than 10, we would have been 95% confident that one form was more effective than the other. Since the difference was only two percentage points, we can conclude that no real difference in results can be detected.

Using the same method to determine whether the rate of return of mailed questionnaires was significantly higher than those left at vehicles or with campers, we have:

$$Sp = 3 \sqrt{\frac{(72)(28)}{100}} = \pm 13.5$$

Since the difference between the distribution method yielding the highest rate of return and that yielding the second highest is

greater than 13.5 percent, we conclude that the superiority of mailing questionnaires is highly significant at the 99% level.

It is recommended that a revised version of the long form, page 5.3, be mailed to respondents whose names and addresses will be obtained by interviewers. In addition, long form questionnaires should be left at unattended vehicles to obtain as many additional responses as possible.

Essentially, the nonresponse bias is not a factor affecting data collection in the site survey. It would be extremely difficult to determine who the nonrespondents were by using the techniques of leaving questionnaires with individuals, user groups, or unoccupied vehicles. On the other hand, followup mailings could be made to persons who provided names and addresses and, to whom questionnaires were subsequently mailed. However, because of the relatively large percentage return, 72%, it does not appear warranted to followup nonrespondents with a repeat mailing of the questionnaire.

The high rates of return--53% of forms left with campers and 72% of forms mailed to campers--were probably partially achieved because of the high motivation of the researchers, both of whom wished the pilot study to be successful, and to their previous experience as teachers in working with and addressing strangers. However, comparable rates should be obtained by interviewer personnel that are appropriately trained, possess sociable personalities, and are motivated toward achieving the objectives of the project.

mail questionnaires sent to a randomly selected sample would also provide representative values--if, the nonresponse factor did not represent a subset of persons possessing different values from the respondent subset. The consultants are confident that the mail survey technique involving a followup mailing to those persons not responding to the first questionnaire will provide a sufficient degree of accuracy and are reasonably representative (with an understatement, discussed in the following pages, of persons 65 and over) when contrasted to the alternative methods of collecting data.

The mail questionnaire technique provides for a considerably higher level of control over data collection. There are no interviewers to train and supervise. Dependency exists upon the U. S. postal service to deliver the mail. Also, there is the potentiality that persons other than the ones to whom questionnaires were addressed would answer. The pilot survey presented an opportunity to study this potential problem area. It is believed that less than one percent of questionnaires were answered by persons not comprising the sample. Evaluations were made of returned questionnaires in which return addresses and names and demographic data such as sex of respondent and household status were studied. While errors will occur, the quality of answers from mail questionnaire respondents was very good. It is concluded that the mail questionnaire survey provides acceptable control capabilities, particularly in the area of obtaining uniformity of responses and absence of bias introduced by interviewers.

Total costs and the relative efficiency of the various techniques clearly indicate the superiority of the mail survey. While

sets of cost estimates for each technique can be simulated through varying assumptions and manipulation of model variables, the consultants estimate that to obtain 1,000 completed personal interviews from cluster samples, the cost would approximate \$10,000; to obtain 2,500 telephone interviews would cost approximately \$3,750; and to have 7,500 mail questionnaires returned would cost approximately \$3,000. The estimated per questionnaire costs would be \$10.00 for personal interviews, \$1.50 per telephone interview, and \$0.40 per mail questionnaire (including the costs of nonreturned questionnaires). Because the analysis of questionnaire data is dependent, in part, upon a sufficient number of responses to develop acceptable confidence intervals, it is questionable whether as few interviews as 1,000 or 2,500 would be sufficient to provide for meaningful cross classifications of data. Considering the various evaluative criteria, for this type of recreation survey in Montana, a significantly larger quantity of data reflecting the behavior of significantly more Montanans would be obtained through the use of mail questionnaires. Therefore, the consultants recommend this method of data collection for the statewide outdoor recreation survey.

The sample for the mail questionnaire survey was derived from the most recent list of persons filing income tax returns with the Montana Board of Equalization. The list consisted of 264,000 returns of which 110,000 were joint returns, 60,000 were married persons filing separate returns, 76,000 were from single persons, and another 18,000 were miscellaneous personal returns. Montana statutes require the following persons to file tax returns:

If you are a single person, or if you are a married person not filing a joint return with your spouse, you are required to file a return if your gross income for the year is \$600 or more. Husband and wife electing to file a joint return are required to file if their combined gross income for the year is \$1,200 or more.

Thus, for all practical purposes, the tax return list is probably the most comprehensive listing of the adult population and households of Montanans and is, therefore, the most representative of the State's population. A systematic random sample was taken from the tax listing using an interval of 1 in 500 with a resultant pilot study sample of 528 persons. An analysis of the structure of the tax list indicated the absence of periodicities or other factors which would preclude the selection of a random sample. Since there is no practical way of describing the various classes of tax returns as compared to known demographic data, the sampling interval remained constant for each of the stratum of the total tax file.

The major factors tested in the pilot survey were (1) the suitability of the questionnaire, i.e., the quality of questions and answers; (2) the response rates obtained from identifying one set of questionnaires, not identifying another, and a repeat or followup mailing to those persons not answering questionnaires identified; and (3) an evaluation of the sample as being representative. The sample of 528 persons was divided into two equal segments by taking every other item for one category and the remaining items comprising the second group. The first category was given identification numbers while the second remained unidentified. Subsequently, of the 528 persons, 28 were not included in the next sample (23 had either moved from the State or the questionnaires were returned as

as undeliverable and 5 persons were deceased). The net sample size was 500 persons. Composition of the sample and return rates were as follows:

Type of Return	Identified*			Unidentified		
	Number Mailed	Number Returned	% Re-turned	Number Mailed	Number Returned	% Re-turned
Joint Return	101	58	57.4	122	44	36.1
Single Return**						
(Male)	73	45	61.7	71	27	38.0
(Female)	63	42	66.7	62	26	41.9
(Sex Unknown)	8	0	0.0	--	--	----
Total	245	145	59.1	255	97	38.0

*Includes as a Percent Returned, responses to the original mailing and one followup mailing.

**Includes persons married but filing single tax returns as well as returns from single persons.

Clearly, the identified questionnaire with a combined return from two mailings of 59.1 percent is superior to the unidentified questionnaire return of 38.0 percent. Therefore, the consultants recommend the procedures of (1) identifying questionnaires with unique numbers and (2) mailing a second identical questionnaire to each of those persons not answering the first mailing.

An evaluation of the nonresponse factor was made following telephone interviews of persons not returning identified mail questionnaires. Of the approximate 107 nonrespondents, 33 persons answered portions of the questionnaire by telephone interview, 29 did not have telephones and could not be contacted, 18 said they would return completed questionnaires (12 persons actually did return their questionnaires), 10 returned their questionnaires just before or during the telephone interviewing (but were not contacted by telephone), 6 said

they had already returned completed questionnaires, 4 had telephones but after repeated calls still could not be contacted, 3 moved to other addresses and could not be reached, 2 refused to answer, and 2 had died. Subtracting the 10 persons returning questionnaires just before or during the telephone interviews, the 29 without telephones, and the 2 deceased, gives a net subsample of 66 nonrespondents (107 minus 41). Of the 66 persons, 20 stated they did not recall receiving questionnaires. A total of 46 persons or approximately two-thirds of the nonrespondent subsample were interviewed by telephone.

The analysis of the nonresponse subsample indicated no significant demographic differences between characteristics of the nonresponse subsample and the subset of respondents to the mail questionnaire except in age categories. Only 9.2 percent of the pilot study respondents were 65 years of age or older while 19.6 percent of the subsample were in that category. Other compared demographic characteristics were sex and marital status, i.e., male-female and married-single categories. Of mail questionnaire respondents, 84.5 percent were married while 78.3 percent of the subsample were married; 52.5 percent of the mail questionnaire respondents were males while 50.0 percent of the subsample were males. It is believed the greater proportion of older persons comprising the telephone respondent subsample also influenced the slightly different sex and marital status data.

It would appear that the older age segment of Montana's population is understated in the returns of the mail survey. Recent census data indicate 68,000 persons or about 10 percent of the State population is 65 or over. Conceivably, the mail questionnaire survey would

understate the older age group, and, theoretically, would fail to represent about half of that group or about 5 percent of the Montana population. However, upon comparison of older persons' participation in outdoor recreation activities between the subsample of nonrespondents and the respondents, the two groups were fairly similar. Also, very few persons of all age groups, including the oldest segment, indicated dissatisfaction with the condition of outdoor recreation in Montana. Older persons, in addition, exhibited a lower interest in outdoor recreation. The understated response of the older population group conceivably would be offset by those older persons returning questionnaires and still active in outdoor recreation pursuits, whereas, those persons not interested in outdoor recreation or unable to participate because of physical limitations would not return questionnaires. (This situation raises the interesting paradox whereby an understatement of returns from older persons increases their impact and overstates their importance to the total picture of outdoor recreation relative to other age categories.)

Because of the large cost of making telephone interviews to nonrespondents, the extreme and profound complexities of weighting adjustments which would then be made, and the potential for exhibiting spurious accuracy resulting from data manipulations, the consultants do not recommend a continuing analysis of the nonresponse factor. Relative statistical-economic efficiency would seem to indicate greater value is obtained by increasing the overall response rate (and, subsequent reduction of the nonresponse rate) through a second questionnaire mailing rather than spending additional sums of money for surveys and analysis of the nonresponse factor.

Editing and coding for both surveys was performed by three people over the time period involved. Hand coding was tedious and monotonous and it is hoped a more feasible method can be used in any subsequent survey.

The data processing division prepared computer printouts conforming to a previously detailed format as established by the consultants from the School of Business Administration at the University of Montana. The consultants were responsible for preparation of the Research Design and Pilot Study manual which was used to conduct the surveys, a key component of the recreation plan.

Recommendations for sampling techniques are presented on pages 10.1-10.3. The recommended methodology for preparation and mailing of questionnaires will be found on pages 11.1-11.3.

The cover letters and the questionnaire used in the general mail survey are presented on the following pages, 16.12 through 16.21.

Analysis of Questionnaire Responses

Responses for most of the questions, excluding open-end ones, have been included in sample tables accompanying the questions. The analysis begins on page 16.22. Responses were tabulated in summary classification formats using the following questionnaire. Included in most instances are tabulations which indicate (1) no response and (2) confusion in answering the question. The quality or appropriateness of a question would be determined, in part, by knowledge of the proportion of persons having difficulty answering specific questions as well as those not choosing to answer.

After reviewing the distribution of answers for each of the questions and considering the no response and confusion factors, some limited revisions were deemed necessary. The revised questionnaires are found on pages 9.7 through 9.19.

Although the number of responses is not indicated in the summary tables of the pilot survey, in most instances the total number was approximately 344 persons. To encourage a building up of total responses, two questionnaires were mailed in the pilot survey to persons filing joint tax returns.

Overall, the quality of answers was very good.

THE MONTANA RESIDENT SURVEY METHODOLOGY

The statewide resident recreation survey provided data about Montanans using parks and designated recreation areas and those residents recreating in undeveloped regions of the State, and those not using outdoor recreation facilities at all. Through the use of a general mail questionnaire sent to Montana residents, data were acquired concerning population by major demographic characteristics; geographic population dispersion; the perceived values of outdoor recreation compared to other forms of recreation as a use of leisure time; frequency of participation in various types of outdoor recreation; preferences for outdoor recreation relative to one another; expectations of future participation in outdoor recreation and use of leisure time; identification of special needs arising from physical handicaps, needs of the very young or very old, and other limiting factors; and general suggestions for improvements in outdoor recreation.

The Montana resident survey methodology was organized into six major parts: (1) the questionnaire design, (2) sampling methods, (3) methodology for preparation and mailing the questionnaire and followup, (4) editing procedures, (5) coding procedures, and (6) the format to be used for presenting the data.

The Questionnaire

Thorough testing of the questionnaire was performed during the summer and fall of 1970. The consultants recommended that the following questionnaire and cover letter be used for the general Montana Resident Survey which was conducted during 1971 and 1972.

Two questionnaires were used. The first was designed for cold weather outdoor recreation activities (which was used for the months of November through March) and a second for warm weather activities (which was used for the months of April through October). The questionnaires were identical except for questions #14 and 17.

Two types of data to be acquired through the Montana Resident Survey are as follows:

1. Month of the year the particular segment of the overall survey refers to; consequently, changes in the recreation mix can be determined (general classification data).
2. The county, planning region, and rural-urban classification of towns in which the respondent lives (general classification data).
3. Marital status (general classification data.)
4. Classification by sex (general classification data.)
5. Age groups classification (general classification data.)
6. Relationship within the household of the respondent (general classification data).
7. Number of persons living within the household (general classification data).
8. Employment status (general classification data).
9. Number of weeks of expected vacation during 1971 (general classification data).
10. Season during which vacation will be taken in 1971 (general classification and preference data).
11. Amount of time during a typical week available for recreation (general classification data).

12. Expectations about the amount of time available in the future for recreation (general classification data).
13. Evaluation of general health (general classification data).
14. General categories of leisure-time activities engaged in during the past month (preferences data).
15. Ranking of general categories of leisure-time activities as to enjoyment (preferences and levels of satisfaction).
16. Outdoor activities engaged in and frequency during the past month (general classification data and some limited preferences data).
17. Preferences and rankings of outdoor recreation activities engaged in during the past month (preferences and levels of satisfaction data).
18. Ranking of frequency of participation in outdoor recreation activities by children in the household (general classification and some limited preferences data).
19. Additional recreation activities or facilities, if any, which should be available for children in respondent's area (preferences and levels of satisfaction data).
20. Amount of time to be spent in the future relative to previous expenditures of time for various outdoor recreation activities (preferences and levels of satisfaction data).
21. Geographic areas most enjoyed or preferred for visiting to engage in outdoor recreation (preferences and levels of satisfaction).

22. Indicated improvements, if any, needed for city or town parks (preferences and levels of satisfaction data).

23. Ranking of types of recreation areas preferred (attitudes and preferences data).

24. Indication of special needs arising from disabilities or handicaps (preferences and general classification data).

25. Evaluation of outdoor recreation opportunities in Montana including citations of the good and bad; also where improvements are believed needed (preferences and attitudes data).

Based upon the pilot test of the general resident survey in which mail questionnaires were used, it was anticipated that the response rate would be between 50 percent to 60 percent.

As it turned out, the response rate was nearly 53 percent. These were the useable questionnaires returned by respondents and varied from a high of 57.1 percent in July to 44.9 percent in September. The percent of questionnaires actually accounted for was 61 percent. The difference in percents was due to those questionnaires returned by the post office as undeliverable, deceased respondents, those in military service, those no longer residents, etc. Some 39 percent of the questionnaires then were unaccounted for and applying the results from the pilot survey it would have to be assumed that the greater number of these were elderly persons who were not interested in, or were physically unable to participate in most of the outdoor recreation activities and therefore wished not to respond.

Sampling Methods

The sample for the resident recreation survey was taken from the State income tax returns files maintained by the Montana Board of Equalization. This list was probably the most representative of households to be found within the State. Other types of lists such as motor vehicle licensed drivers or persons with hunting and fishing licenses were not representative of the general population or were not available for sampling in an efficient manner.

The consultants recommended a systematic random sample be drawn from the income tax returns for the most recent year available, viz., 1969. A sampling frequency was established which would produce a mailable list of 1,000 items per month for a 12-months' period or a total of 12,000 items. To obtain a mailable list of 1,000 items per month, approximately 1,100 were selected because five to ten percent of the items selected were not as they represented persons deceased or estates. With the selection of 1,100 items per month, 13,200 would be needed for one year. The total size of the universe would determine the interval for selection. Thus, from a universe (of tax returns) of 280,000 items, to obtain 13,200 for the sample, a sample interval of approximately 20 would be used ($280,000 \div 21.2 = 13,200$.)

The income tax returns files consist of joint returns from married persons, single returns from persons either married or single, and a small number of other personal returns. A systematic random sample was made of the returns based upon the filing systems used. Once the appropriate number of names and addresses were selected through the systematic random sample

program, they were listed in numerical order by ZIP code. Another systematic random sampling procedure was followed to divide the sequentialized list into 12 equal lists representing the 12 monthly mailings. The procedure recommended approximated a simple random sample. Every item within the universe had an equal and known chance for selection.

There were no know conditions or factors which indicated the previously described sampling methods would produce any periodicities or other bias. Tax returns are filed by Social Security numbers. Because of the nature of the joint returns records, the computer sample selection program alternately selected husbands and wives so they were equally represented. The presence of an ampersand identified joint returns. Names for joint returns were on file as, for example: John C. & V. Smith, or H. M. & C. Brown, etc. If the first item represented the husband to be selected and the second, the wife, the following printout occurred with the recommended program: Mr. John C. Smith, Mrs. H. M. Brown, etc.

Preparation and Mailing the Questionnaire

Data Processing provided the Fish and Game Department with names and addresses of persons composing the Montana Recreation Survey sample. The sample was divided into 12 monthly sub-samples and was identified by month through the first two digits found on each pressure sensitive name and address label.

The General Statewide Mail Survey Methodology

The resident statewide mail questionnaire pilot survey was conducted during September, 1970. Prior to the pilot study, various questionnaires were designed and tested in classes at the University of Montana and tested with personnel at the Montana Fish and Game Department. Numerous improvements were made before the pilot study questionnaires were mailed. As a result of extensive pre-testing, relatively few changes were made in the final recommended questionnaire.

The consultants evaluated the appropriateness of other survey methods including telephone and personal interviews as well as observation techniques. The criteria used to evaluate the several methods included the: (1) types of data obtained, (2) accuracy and representativeness of data, (3) control capabilities, (4) total cost of each technique, and (5) relative efficiency obtained by the several methods. Ultimately, the mail questionnaire method was selected because of its apparent superiority over the other techniques.

As a prelude to experimentation, the population of the State was evaluated along with the physical characteristics of terrain and climate. Montana comprises 147,138 square miles of land and water--the fourth largest state as measured by area within the United States. It has approximately 694,000 inhabitants, a population density of only 4.8 persons per square mile. It is exceeded only by Alaska, Wyoming, and Nevada with fewer persons per square mile. The national population density per square mile is approximately 57

persons; thus, Montana has about one-twelfth the national population density. The distribution of the population, furthermore, is scattered throughout the State. The 1970 census of population placed about 45 per cent of Montana's population in rural areas. Only two cities within the State qualify as Standard Metropolitan Statistical Areas. Neither of these is ranked within the 215 largest of the United States. The large geographic area of Montana and the dispersed population residing therein create data collection problems different from those encountered where population density is considerably greater.

Montana's population is far from homogeneous. Pronounced demographic differences exist, obviously, along with subtle, but important, cultural differences reflecting (1) changing cultural patterns of rural-urban residents as major population centers grow and people move to them from rural areas, (2) relative isolation in various communities arising from natural barriers of mountains and rivers and the absence of elaborate transportation and communication systems, (3) subcultures of American Indians living either on or off reservations, and (4) the absence of several major social constraints found elsewhere in the United States arising, in part, from population concentrations.

Aligned to the State's heterogeneous population is the diversity of terrain and climate, and, consequently, recreational opportunities. On a given spring day in Western Montana, a family may be confronted with numerous outdoor recreation options, all of which may be present within half a dozen miles of that family's residence. Members of the family may collectively or individually go snow

6.7

skiing, snowmobile riding, picnicking, hiking, camping, fishing, or play golf. Yet, in other regions of the State, outdoor recreation may be more restricted with only a relatively few activities present.

Observation techniques are unsuitable for obtaining the types of data needed by the Fish and Game Department, i.e., it is almost impossible to observe within reasonably brief time periods, factors such as motivation, attitudes, preferences, and levels of satisfaction. Cultural anthropologists with large grants and several years available for investigation would be needed. Thus, this method was not tested by the consultants.

Personal interviewing and telephone interviewing are not recommended for several reasons. A mail questionnaire survey would provide essentially the same types of data as could be obtained either by personal or telephone interviews. While personal interviews would likely provide somewhat greater depth through application of "probing" techniques, trained interviewers are not available. (The University of Montana through its Bureau of Business and Economic Research maintains a Survey Research Center. The interviewers of the Center are women living in Missoula. They are not trained in depth interviewing. Furthermore, traveling throughout the State would be difficult and undesirable for most of them.)

Personal interviews coupled with repeated followups for persons not at home would reduce the nonresponse factor and potential non-response bias. However, the cost would significantly increase and there would still be some nonresponse factor to contend with. If personal interviews were used, a cluster sampling procedure would be most appropriate in obtaining statistical and economic efficiency.

Once again, though, the geographic dispersion of the State's population would considerably raise data collection costs. As a conclusion, cluster sampling techniques would be difficult to apply because of the complexities of determining and selecting representative clusters.

Telephone interviews were tested both by the consultants and by personnel of the Department of Fish and Game. An evaluation of the responses from samples indicated an entirely different questionnaire would be needed for telephone interviewing. Loss of several categories of data would also occur. While demographic data were obtained without difficulty, the more substantive data--eliciting respondent motivation, attitudes, and preferences--were difficult to obtain in sufficient depth and with sufficient accuracy to be meaningful. (See questions #8 through #20, pages 9.7 through 9.18.) Thus, the recognition form of testing (where the respondent is given a list from which to select alternatives) was too complex for telephone interviews. By modifying the questionnaire to a recall format (where the respondent is asked to indicate from memory specific alternatives or actions), the type of response required was simplified but still unsatisfactory because of the residual complexity and the difficulty for the respondent to recall information from memory without the aid of visual presence of the alternatives.

Both techniques of personal and telephone interviewing could be executed through samples believed to be acceptably representative, although in the case of telephone interviews, some distortion would occur because not all households within the State have telephones. There would be some nonresponse factor for both methods. However,

MONTANA RESIDENT RECREATION SURVEY

Instructions: Most of the following questions can be answered by checking a statement that most accurately describes your thoughts about a question. Your answers are confidential. Please return your completed questionnaire in the enclosed postage-paid envelope. Thank you for your time and effort.

1. Please indicate your present marital status.
☐ ₁ Married ☐ ₂ Single (never married, divorced, separated, or widowed)
2. Please indicate your sex. ☐ ₁ Male ☐ ₂ Female
3. Please check the box that includes your age.
☐ ₁ Under 15 ☐ ₃ 25 to 34 ☐ ₅ 45 to 64
☐ ₂ 15 to 24 ☐ ₄ 35 to 44 ☐ ₆ 65 years or over
4. Please check one of the following. Are you the:
☐ ₁ head of the household ☐ ₃ son or daughter
☐ ₂ married to the head of the household ☐ ₄ other: _____
5. Including yourself, how many persons live in your household?
☐ ₁ 1 ☐ ₂ 2 ☐ ₃ 3 ☐ ₄ 4 ☐ ₅ 5 ☐ ₆ 6 or more persons
6. Are you employed? ☐ ₁ Yes ☐ ₂ No, not employed
7. Please check the number of weeks vacation you expect to have during 1972.
☐ ₁ No vacation in 1972 ☐ ₃ About one week ☐ ₅ About three weeks
☐ ₂ Less than one week ☐ ₄ About two weeks ☐ ₆ Four weeks or more
8. Please check the box showing the season when you took (or plan to take) all or most of your vacation during 1972.
☐ ₁ Will take no vacation during 1972
☐ ₂ Spring ☐ ₃ Summer ☐ ₄ Fall ☐ ₅ Winter
9. How much time during a typical week of this past month did you have available for recreation?
☐ ₁ No time for recreation ☐ ₄ About two days each week
☐ ₂ About half a day each week ☐ ₅ Over two days each week
☐ ₃ About one whole day each week
10. A year from now, do you expect to have:
☐ ₁ considerably more free time for recreation ☐ ₃ about the same amount of time
☐ ₂ a little more free time ☐ ₄ a little less free time
☐ ₅ considerably less free time
11. Please evaluate your general health. Do you consider yourself:
☐ ₁ very healthy and physically able to engage in all types of outdoor activities
☐ ₂ reasonably healthy and strong but limited in ability to engage in some types of outdoor activities
☐ ₃ physically able to participate only in less strenuous outdoor activities
☐ ₄ sick or disabled and unable to participate in outdoor activities

12. Several groups of leisure-time activities are listed below. Please check any group if you engaged in any of the activities listed in it during the past month.
- ☐ Indoor Spectator Activities -- Examples include television, radio, records, reading, concerts, plays, movies, or indoor sports or games.
 - ☐ Social Activities -- Examples include social club or fraternal meetings, church, entertaining friends or being entertained by them.
 - ☐ Indoor Play Activities -- Examples include indoor games such as cards, bowling, square dancing, etc., or indoor sports or games such as basketball, volley ball, or swimming.
 - ☐ Self-Improvement Activities -- Examples include attending classes or school, participating in health and fitness programs.
 - ☐ Home-Related Activities -- Examples include gardening and yardwork, home improvements and repairs, shop work, sewing, making things.
 - ☐ Outdoor Recreation Activities -- Examples include fishing, hunting, boating, swimming, walking, bicycling, horseback riding, golfing, camping, picnicking, sightseeing, skiing, driving, or outdoor spectator activities.

13. Please rank the activities you have checked in the previous question in terms of which ones you enjoyed the most during this past month. (Write in number 1 for your first choice, number 2 for your second, and number 3 for your third choice.)

- | | |
|--|--|
| <input type="checkbox"/> Indoor Spectator Activities | <input type="checkbox"/> Self-Improvement Activities |
| <input type="checkbox"/> Social Activities | <input type="checkbox"/> Home-Related Activities |
| <input type="checkbox"/> Indoor Play Activities | <input type="checkbox"/> Outdoor Recreation Activities |

14. Please check how often you engaged in each of the activities listed below during the past month. (If you did not engage in an activity, please leave that line blank.)

Recreation Activities	Frequency		
	1 TIME	2 to 4 TIMES	5 TIMES OR MORE
1 Bicycling			
2 Motor Bike Riding			
3 Boating (with motor)			
4 Driving for Pleasure			
5 Back Country Touring (4-wheel drive, etc.)			
6 Fishing			
7 Horseback Riding			
8 Hunting			
9 Ice Skating			
10 Picnicking			
11 Playing Outdoor Games			
12 Sightseeing			
13 Snow Skiing			
14 Snowmobile Riding			
15 Tobogganing or Sledding			
16 Walking for Pleasure			
17 Other -- Please indicate Activity:			

15. If you engaged in any of the above activities during the past month, please write the numbers of the one that you liked best, next best, and third best.

- ☐ First Preference (liked the best)
- ☐ Second Preference
- ☐ Third Preference

16. IF YOU HAVE CHILDREN LIVING AT HOME:
- a. Please write the numbers of the activities listed in question 14 (above) that your children participated in most frequently during the past month.
- () Most Frequently
- () Second Most Frequently
- () Third Most Frequently
- b. If there were any outdoor recreation activities your children would have enjoyed but that were not available where you live, please write the names of these activities:
- _____
- _____

17. Of the following outdoor activities, please check the ones which you would like to spend more time, the same amount of time, or less time on within the next year. (If you are not interested in a type of activity, leave that line blank.)

Recreation Activities	Would like to spend:		
	MORE TIME	SAME AMOUNT	LESS TIME
1 Bicycling			
2 Motor Bike Riding			
3 Boating (with motor)			
4 Driving for Pleasure			
5 Back Country Touring (4-wheel drive, etc.)			
6 Fishing			
7 Horseback Riding			
8 Hunting			
9 Ice Skating			
10 Picnicking			
11 Playing Outdoor Games			
12 Sightseeing			
13 Snow Skiing			
14 Snowmobile Riding			
15 Tobogganing or Sledding			
16 Walking for Pleasure			
17 Other -- Please indicate activity:			

18. If you are interested in outdoor recreation, what geographic areas in Montana do you enjoy most or what areas would you like to visit? (Examples include: Flathead Lake, Lower Yellowstone River, etc.)
- _____
- _____

19. What improvements would you like made in the environment and facilities of your city or town parks?
- _____
- _____
- _____

20. Several types of outdoor recreation areas are listed below. If you are interested in outdoor recreation, please read the following descriptions. Then, write the numbers of the one that provides you with the greatest amount of enjoyment and that you like the best, next best, and your third preference.

- 1-- Intensively Developed Recreation Areas -- Examples include sites of intensive development found in city parks such as swimming pools, tennis courts, playfields, picnic areas, etc.
- 2-- General Outdoor Recreation Areas -- Examples are rest and recreation areas where the natural environment is an important part of the recreation experience, such as state parks and forest campgrounds with developed camping, picnicking, boating facilities, etc.
- 3-- Natural Undeveloped Environment Areas -- The natural environment is largely undeveloped but various types of recreation such as camping, fishing, or picnicking can take place.
- 4-- Outstanding Natural Areas -- These areas have outstanding natural features; examples would include the Lewis and Clark Caverns, Glacier and Yellowstone Parks, etc.
- 5-- Primitive Areas -- These areas are roadless and are characterized by natural wild conditions; there are no developments to be found in such areas.
- 6-- Historic and Cultural Sites -- Places which are of historical significance in Montana are included in this group; for example, Custer Battlefield, ghost towns, etc.

() First Preference (The number of the above area liked best)

() Second Preference

() Third Preference

21. If there are any members of your household, including yourself, who have special outdoor recreational needs because of disabilities or handicaps, would you please write in the space below what these needs are.

22. What is your opinion of outdoor recreation in Montana? Please tell us what you consider being done well or badly, and what improvements you believe are needed.

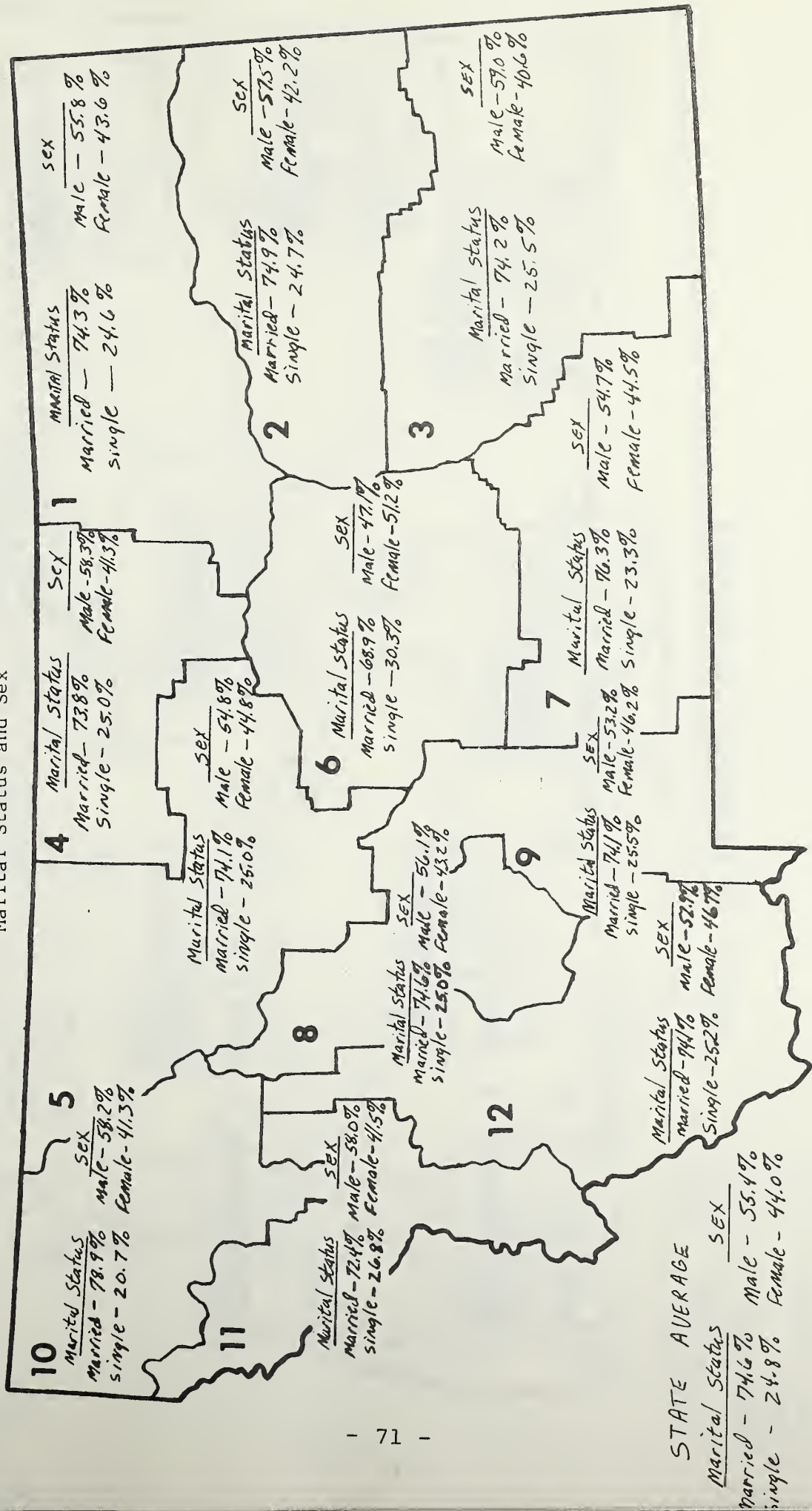
Thank you for your assistance in planning Montana's future outdoor recreation opportunities. Please return this questionnaire in the enclosed postage-paid envelope addressed to Recreation and Parks Division, Montana Fish and Game Department, Helena, Montana 59601.

STATE PLANNING REGIONS

Resident Survey

Marital Status and Sex

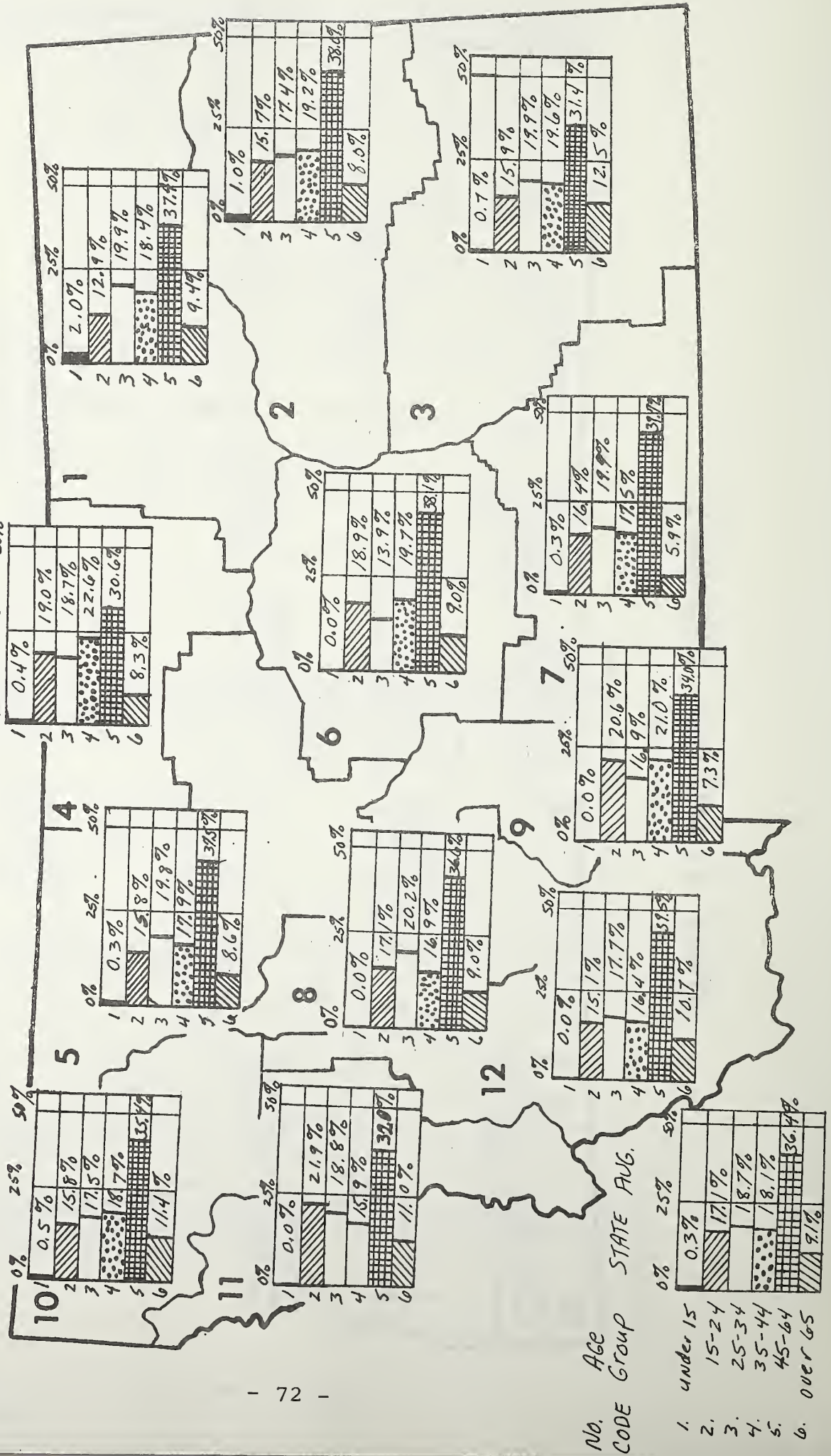
Questions 1 & a



STATE PLANNING REGIONS

Age Groups Participating in Recreation

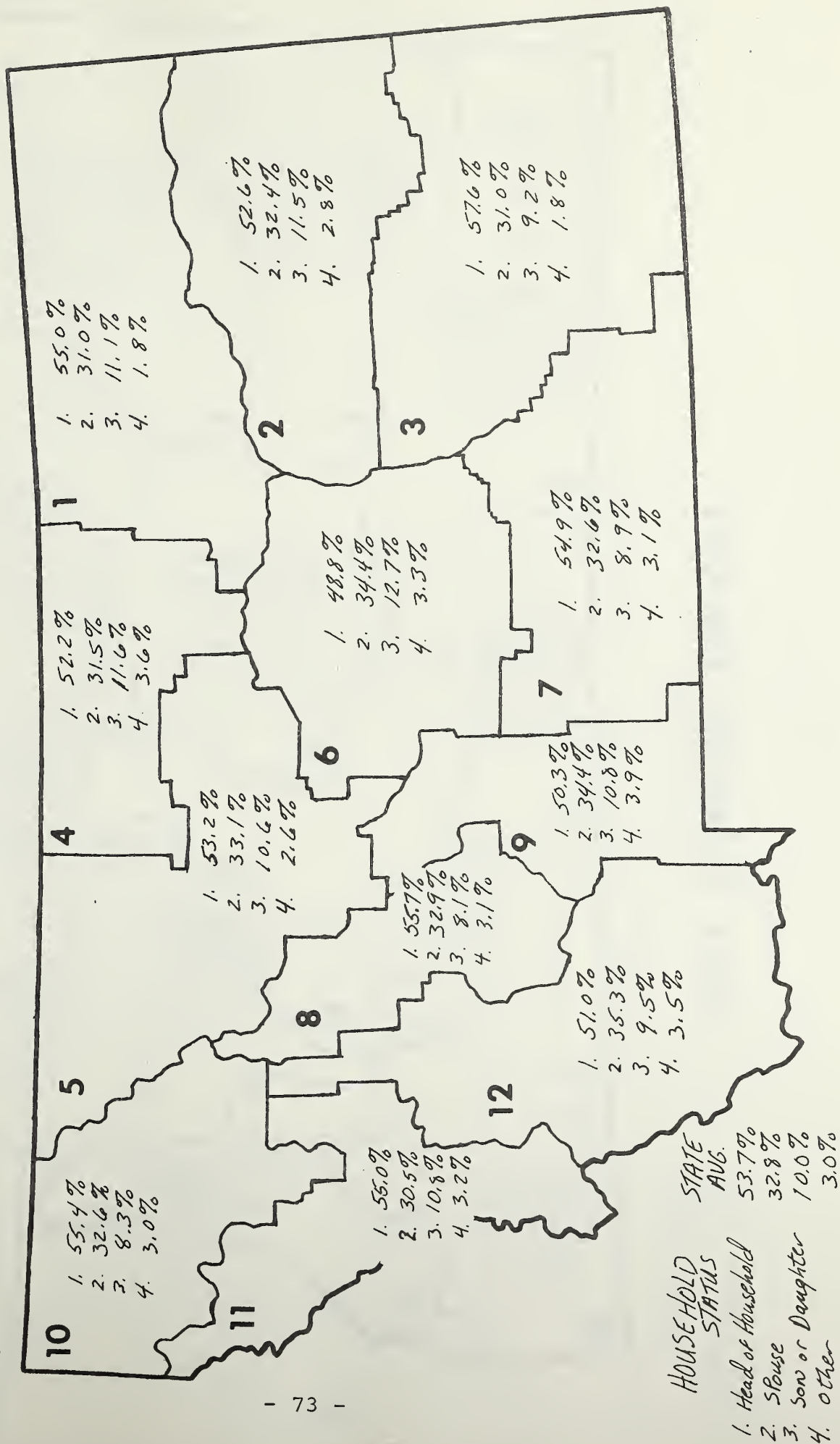
Question 3



STATE PLANNING REGIONS

Question 4

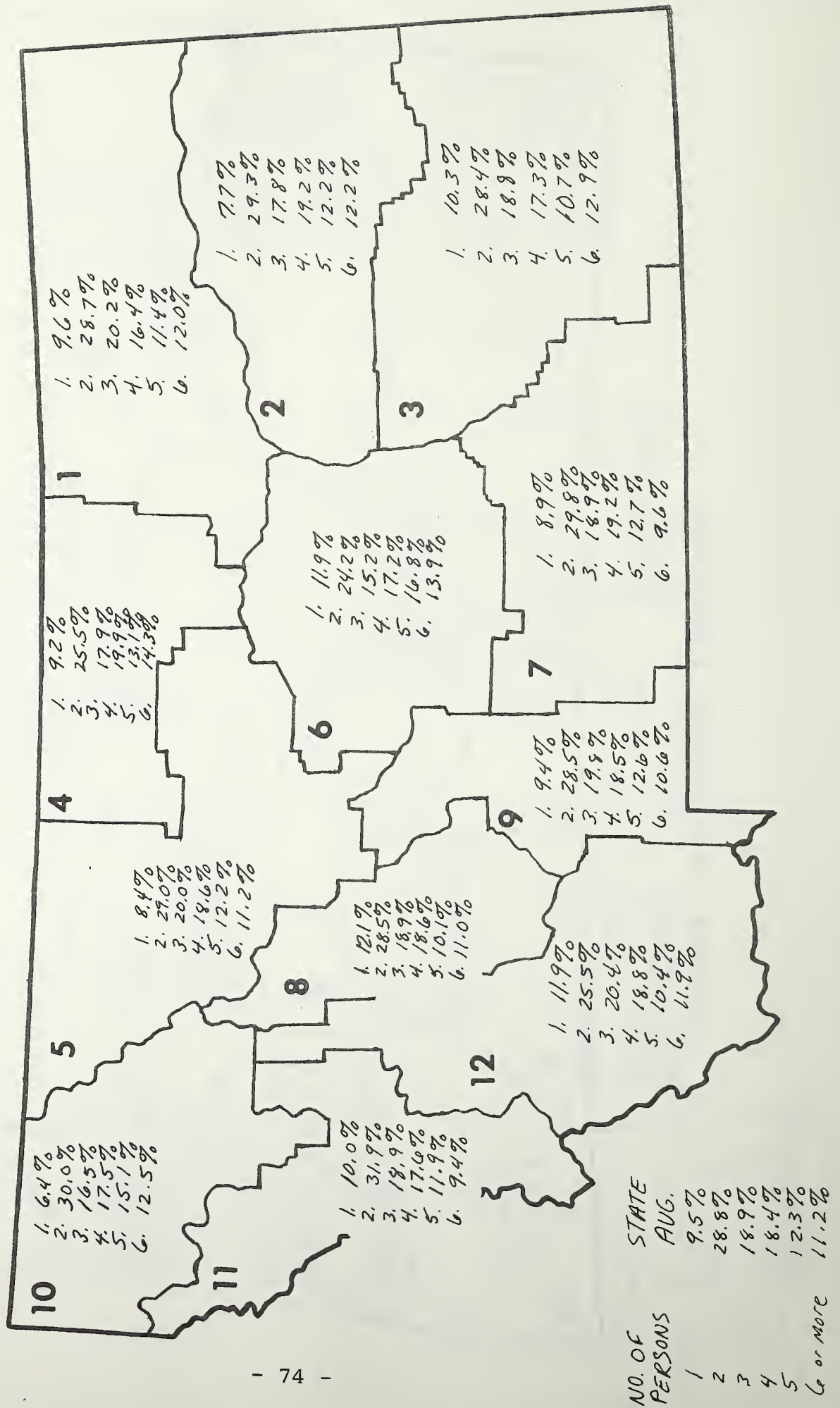
Household Status



STATE PLANNING REGIONS

Question 5

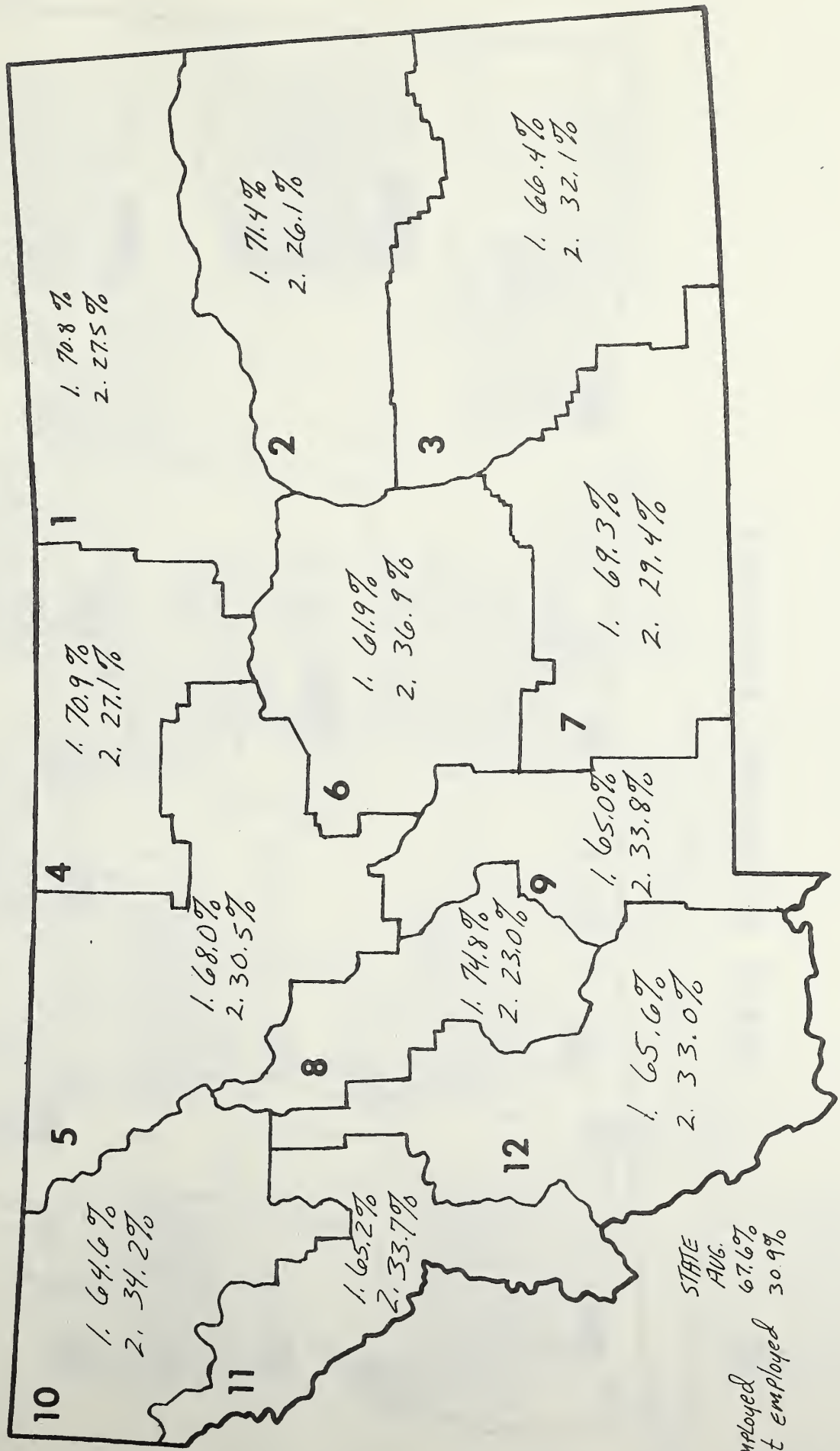
Size of Household



STATE PLANNING REGIONS

Question 6

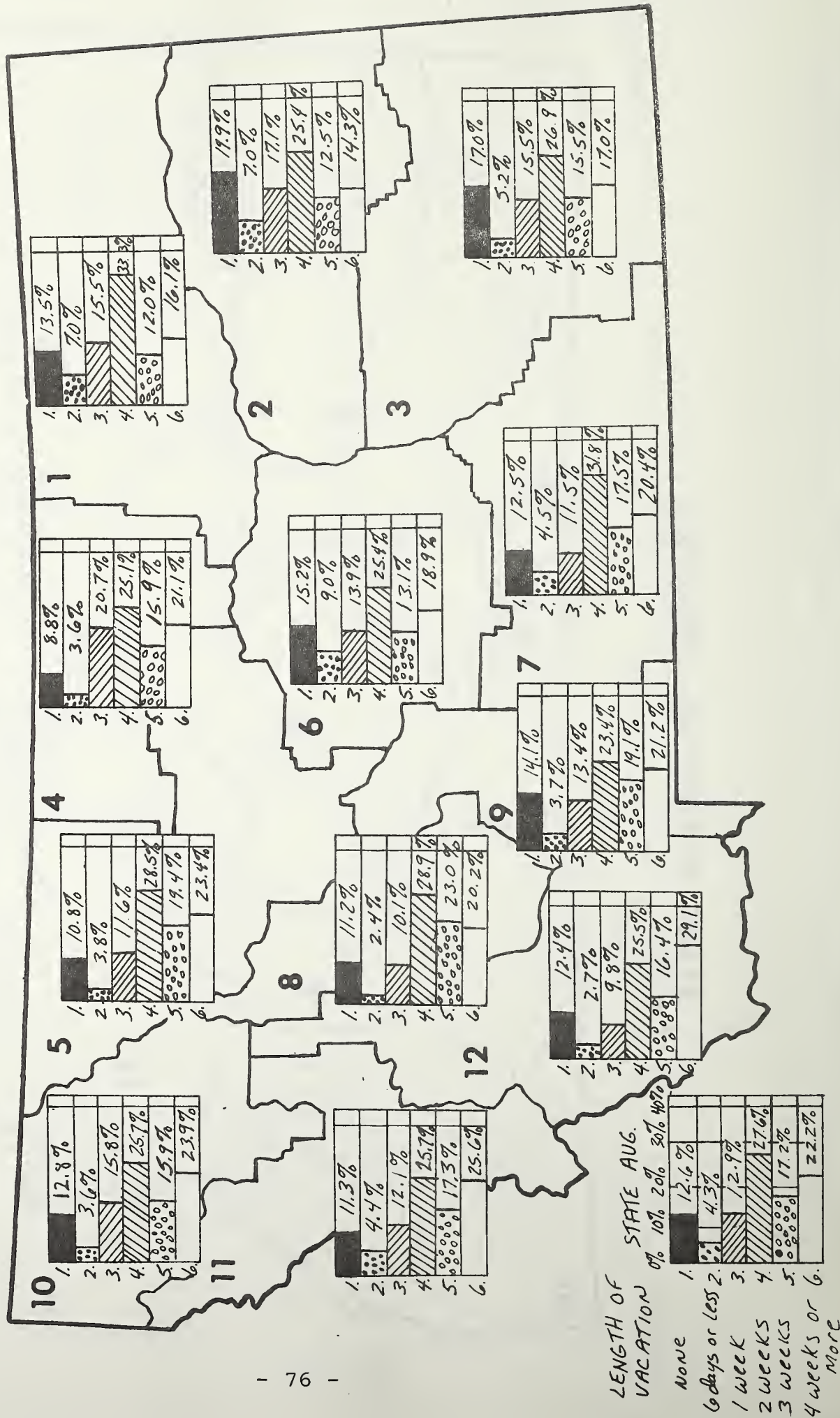
Employment Status



STATE PLANNING REGIONS

Question 7

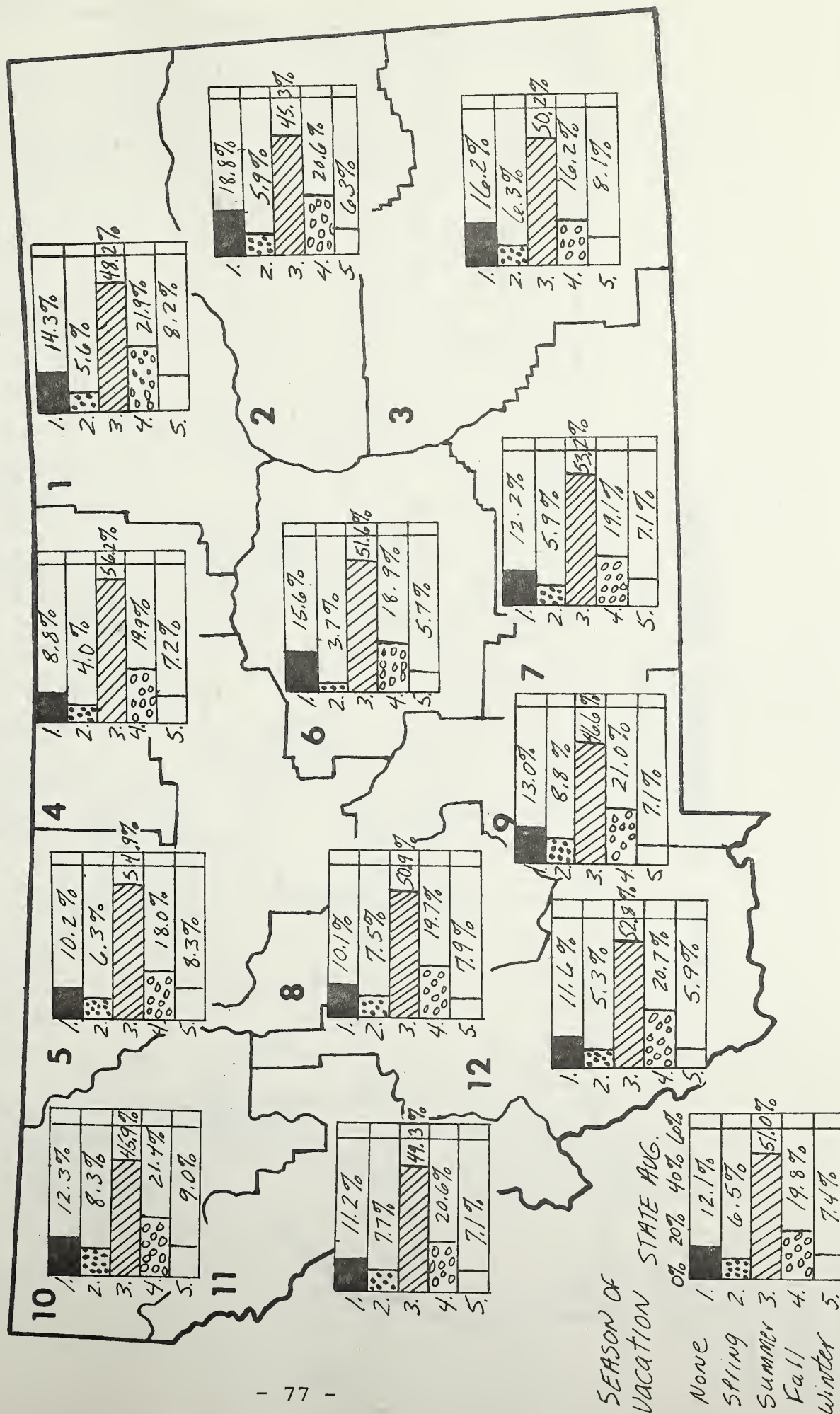
Length of Vacation



STATE PLANNING REGIONS

Season of Vacation

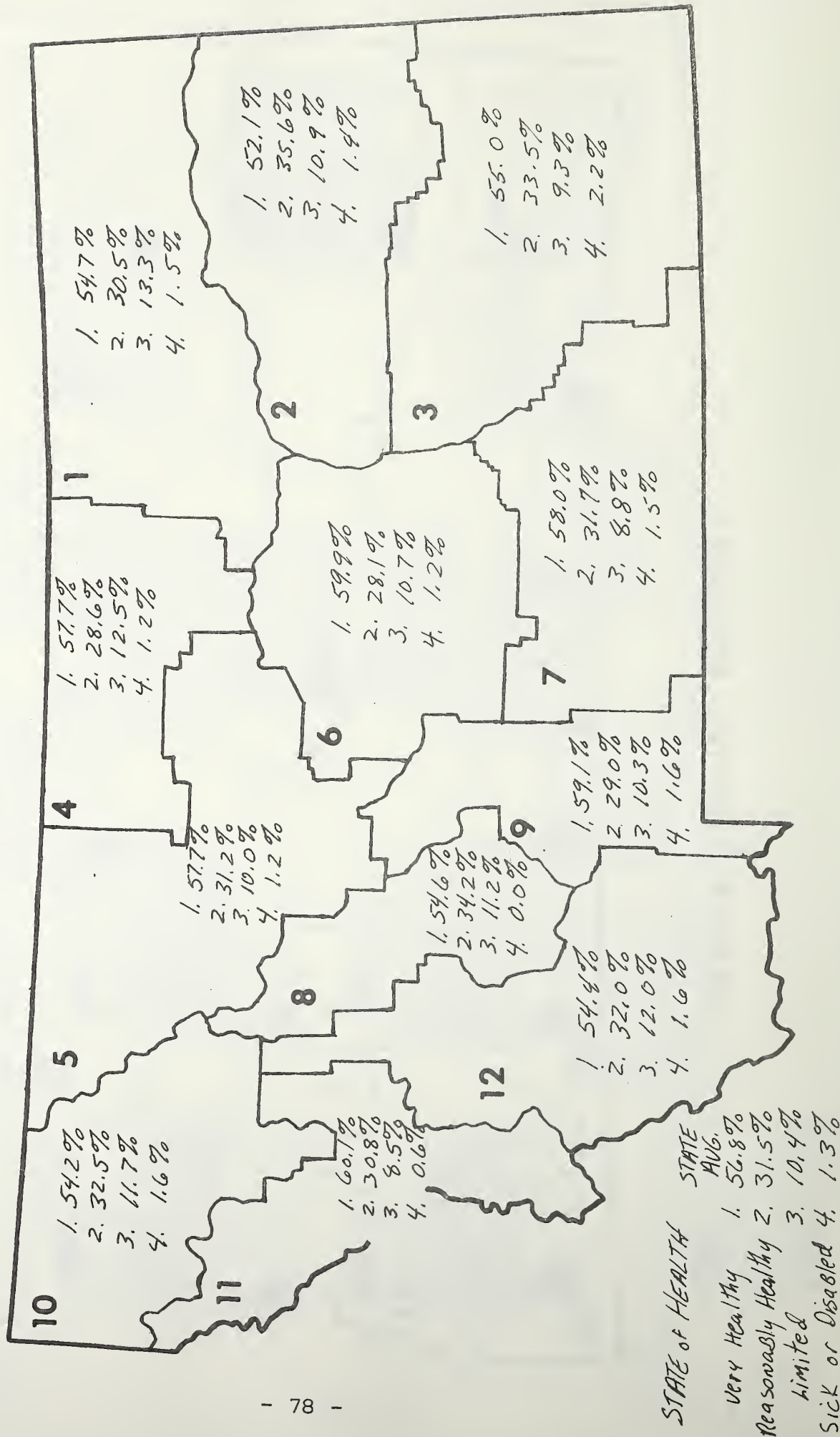
Question 8



STATE PLANNING REGIONS

Question 11

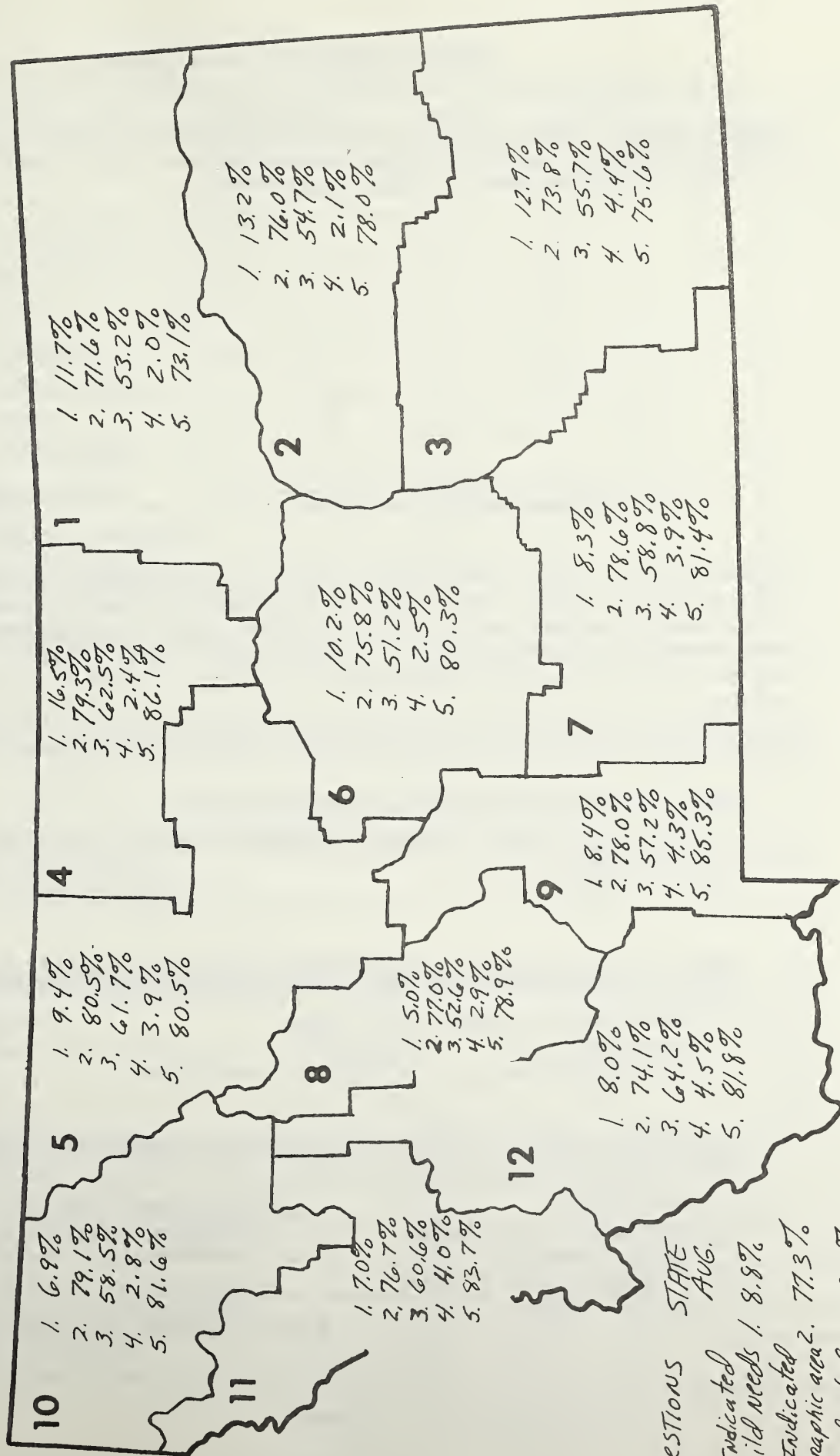
Perceived State of General Health



STATE PLANNING REGIONS

Questions 16b, 18, 19
21 & 22

Respondents Indicating a Comment on Open-end Questions



QUESTIONS STATE

AUG.

Indicated
child needs 1. 8.8%

Indicated
Geographic area 2. 77.3%

Indicated
Improvements
Needed 3. 58.8%

Indicated, need
For Handicapped 4. 3.6%

21.1%

MONTANA RECREATION AREA SURVEY

Instructions: Most of the following questions are about the Montana recreation area listed below which you were using when this questionnaire was left at your vehicle or when you were contacted:

Montana Recreation Area

Date

Please fill out this questionnaire when you return home from the trip or have left this recreation area. Many of the questions can be answered by checking a statement that most accurately describes your thoughts about the question. Your answers are confidential. Please return your completed questionnaire in the enclosed addressed, postage-paid envelope. Thank you for your time and effort.

1. How long were you at this recreation site?

- | | |
|---|--|
| <input type="checkbox"/> One day or less, but not overnight | <input type="checkbox"/> More than two nights but less than seven nights |
| <input type="checkbox"/> Overnight | |
| <input type="checkbox"/> Two nights | <input type="checkbox"/> Seven nights or more |

2. What type of sleeping accommodations did you use while at this recreation site? (If more than one type, check the one most frequently used.)

- | | | |
|---|---|---|
| <input type="checkbox"/> None, did not stay overnight | <input type="checkbox"/> Camper | <input type="checkbox"/> Other -- please explain: _____ |
| <input type="checkbox"/> Travel trailer | <input type="checkbox"/> Tent | |
| | <input type="checkbox"/> Slept out-of-doors | _____ |

3. Why did you choose to use this particular recreation area? (Check more than one answer if needed.)

- | | |
|--|---|
| <input type="checkbox"/> Near home | <input type="checkbox"/> Near some desired activity (such as swimming, boating, picnicking, etc.) |
| <input type="checkbox"/> Convenient to highway | |
| <input type="checkbox"/> Natural beauty | <input type="checkbox"/> Other reason -- please explain: _____ |
| <input type="checkbox"/> Recommended by friends or relatives | |

PAGE 1 (of questionnaire)

4. Please check the adequacy of facilities at this recreation area.

Facilities	Did Not Use or Were Not Available	Adequacy of Facilities Used				
		Excellent	Good	Average	Poor	Very Poor
1. Picnic Table						
2. Fireplace						
3. Toilet						
4. Boat Ramp						
5. Swimming Beach						
6. Firewood						
7. Drinking Water						
8. Garbage Cans						
9. Automobile Parking						
10. Site for Camping Vehicle or Tent						
11. Other -- please explain:						

5. Are there any types of outdoor recreation activities or facilities you would like at this recreation area which are not presently available?

() Yes () No

IF YES, what activities or facilities should be provided at this area?

6. Please evaluate environmental factors you found in this recreation area.

Environmental Factors	Condition of Environmental Factors				
	Excellent	Good	Average	Poor	Very Poor
1. Sufficient privacy					
2. Sufficient space					
3. Neat & clean, well maintained					
4. Natural beauty of area					
5. Accessibility to this area					
6. Convenience of facilities					
7. Other -- please explain:					

7. Please check how often you or other members of your party engaged in each of the activities listed below while based at this recreation area. (If no one in your party engaged in an activity while at this recreation area, please leave that line blank.)

Recreation Activities	Frequency		
	1 Time	2 to 4 Times	5 Times or More
1. Bicycling			
2. Motor Bike Riding			
3. Boating (with motor)			
4. Camping -- Count each day at site as one time			
5. Driving for pleasure			
6. Back Country -- 4-wheel Touring drive etc.			
7. Fishing			
8. Hiking			
9. Mountain Climbing			
10. Picnicking			
11. Playing Outdoor Games			
12. Resting and Relaxing			
13. Rock Hounding			
14. Sightseeing			
15. Swimming			
16. Walking for Pleasure			
17. Water Skiing			
18. Other Pursuits (nature study, etc.) Please indicate:			

8. If you or others in your party engaged in any of the above activities, while based at this area, please write the number of the activity that was enjoyed most, second and third choices.

() First preference (Activity Enjoyed Most)

() Second preference

() Third preference

PAGE 3 (of questionnaire)

9. Including yourself, please write the number of adults, teenagers, and preteens in your group.

_____	Number of Adults	_____	Number of Teenagers	_____	Number of Preteens
-------	---------------------	-------	------------------------	-------	-----------------------

10. Please write the name of your home state, county, and city or town.

_____	State	_____	County	_____	City or Town
-------	-------	-------	--------	-------	--------------

11. If you are interested in outdoor recreation, what geographic areas in Montana do you enjoy most or what areas would you like to visit?
(Examples include: Flathead Lake, Lower Yellowstone River, etc.)

12. What is your opinion of outdoor recreation in Montana? Please tell us what you consider being done well or badly and especially what improvements not previously indicated you believe are needed.

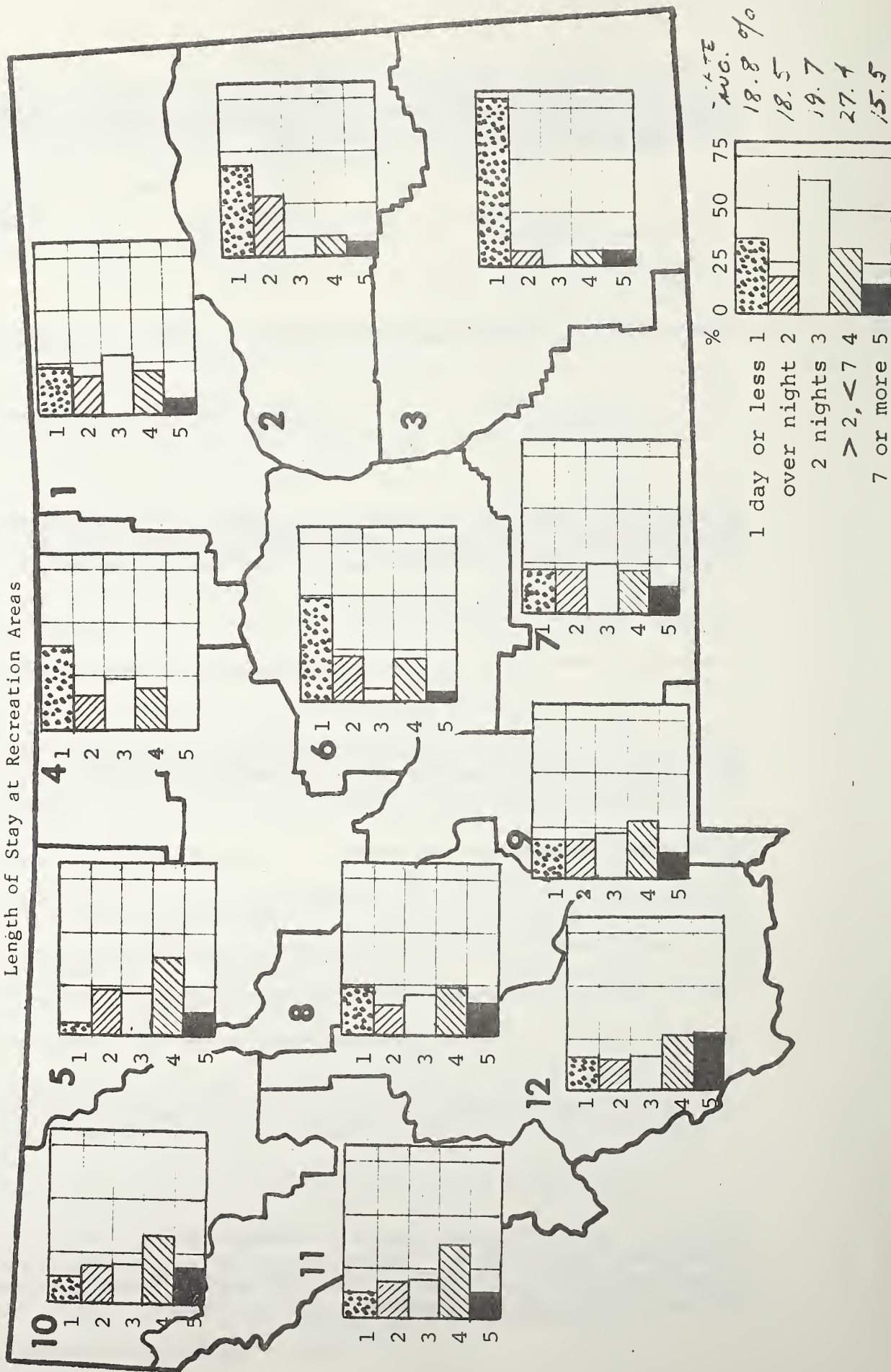
Thank you for your assistance in planning Montana's future outdoor recreation opportunities. Please return the questionnaire in the enclosed postage-paid envelope to Recreation and Parks Division, Montana Fish and Game Department, Helena, Montana 59601.

STATE PLANNING REGIONS

Question 1

Recreation Area Survey

Length of Stay at Recreation Areas



Question 1

Length of Stay at Recreation Areas by Agency or Administrator

NATIONAL PARK SERVICE

	%
1	1.5
2	<u>23.0</u>
3	19.6
4	<u>41.2</u> *
5	14.7

BUREAU OF SPORT FISH & WILDLIFE

	%
1	<u>60.0</u>
2	<u>40.0</u>
3	0.0
4	0.0
5	0.0

U. S. FOREST SERVICE

	%
1	14.0
2	17.7
3	<u>20.7</u>
4	<u>29.7</u>
5	18.1

MONTANA FISH & GAME

	%
1	<u>22.6</u>
2	18.0
3	17.1
4	<u>21.2</u>
5	13.9

STATE OF
AUG. 1960

	STATE OF AUG. 1960
1	ONE DAY OR LESS
2	OVER NIGHT
3	TWO NIGHTS
4	MORE THAN 2, LESS THAN 7
5	SEVEN OR MORE NIGHTS

BUREAU OF LAND MANAGEMENT

	%
1	<u>23.0</u>
2	<u>37.7</u> *
3	18.0
4	16.4
5	4.9

GAME OR STATE FORESTER

	%
1	0.0
2	10.0
3	<u>40.0</u>
4	<u>40.0</u>
5	10.0

ARMY CORPS OF ENGINEERS

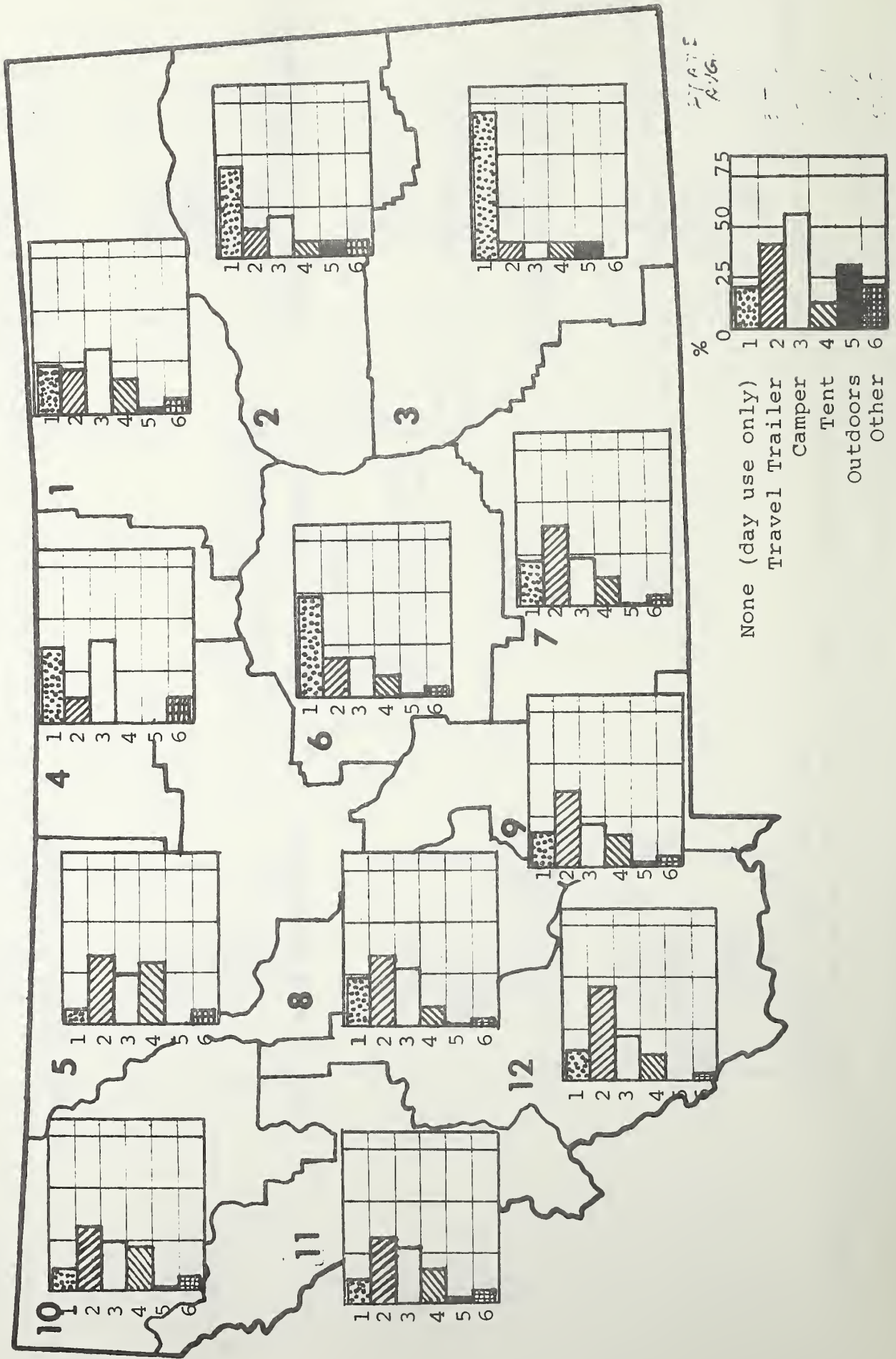
	%
1	11.7
2	11.7
3	<u>32.5</u>
4	<u>32.5</u>
5	11.7

INDIAN RESERVATIONS

	%
1	<u>27.7</u>
2	15.9
3	<u>18.2</u>
4	15.9
5	2.3

STATE PLANNING REGIONS

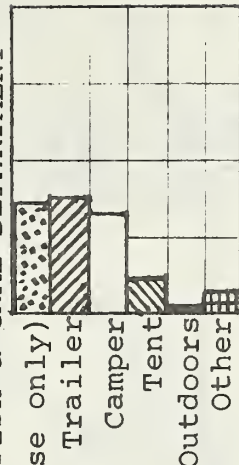
Question 2 Sleeping Accommodations Used at Recreation Areas



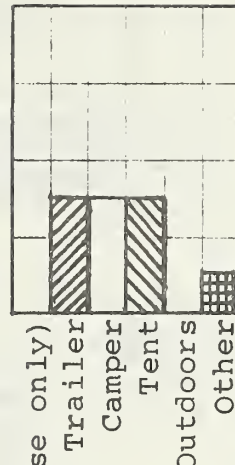
Question 2 Sleeping Accommodations Used at Recreation Areas by Agency or Administrator
BUREAU OF SPORT FISHERIES & WILDLIFE



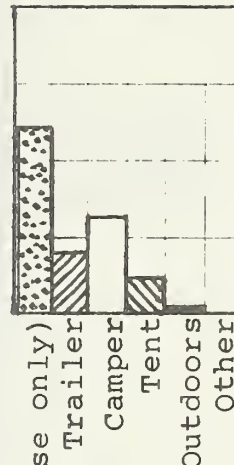
MONTANA FISH & GAME DEPARTMENT



OFFICE OF STATE FORESTER

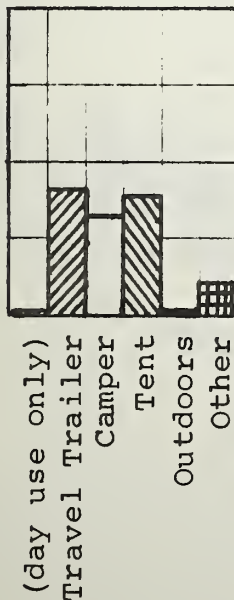


INDIAN RESERVATIONS

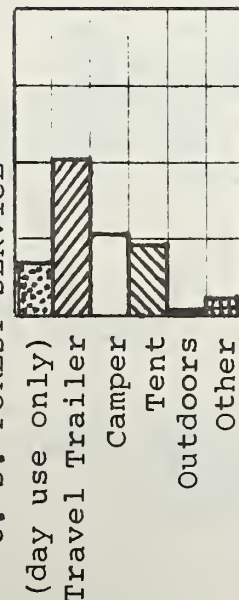


STATE AVG
None 18.1 %
Tr. Trailer 35.2
Camper 24.0
Tent 16.1
Outdoors 1.7
Other 5.0

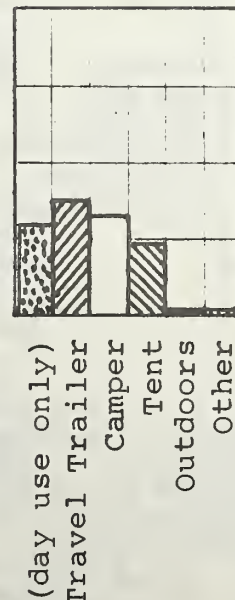
NATIONAL PARK SERVICE



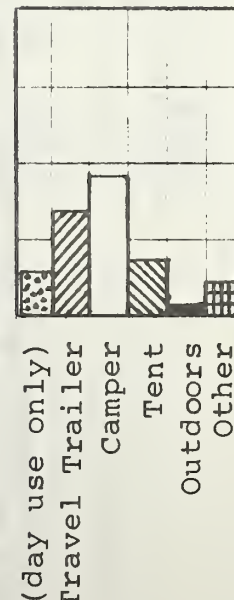
U. S. FOREST SERVICE



BUREAU OF LAND MANAGEMENT



ARMY CORPS OF ENGINEERS

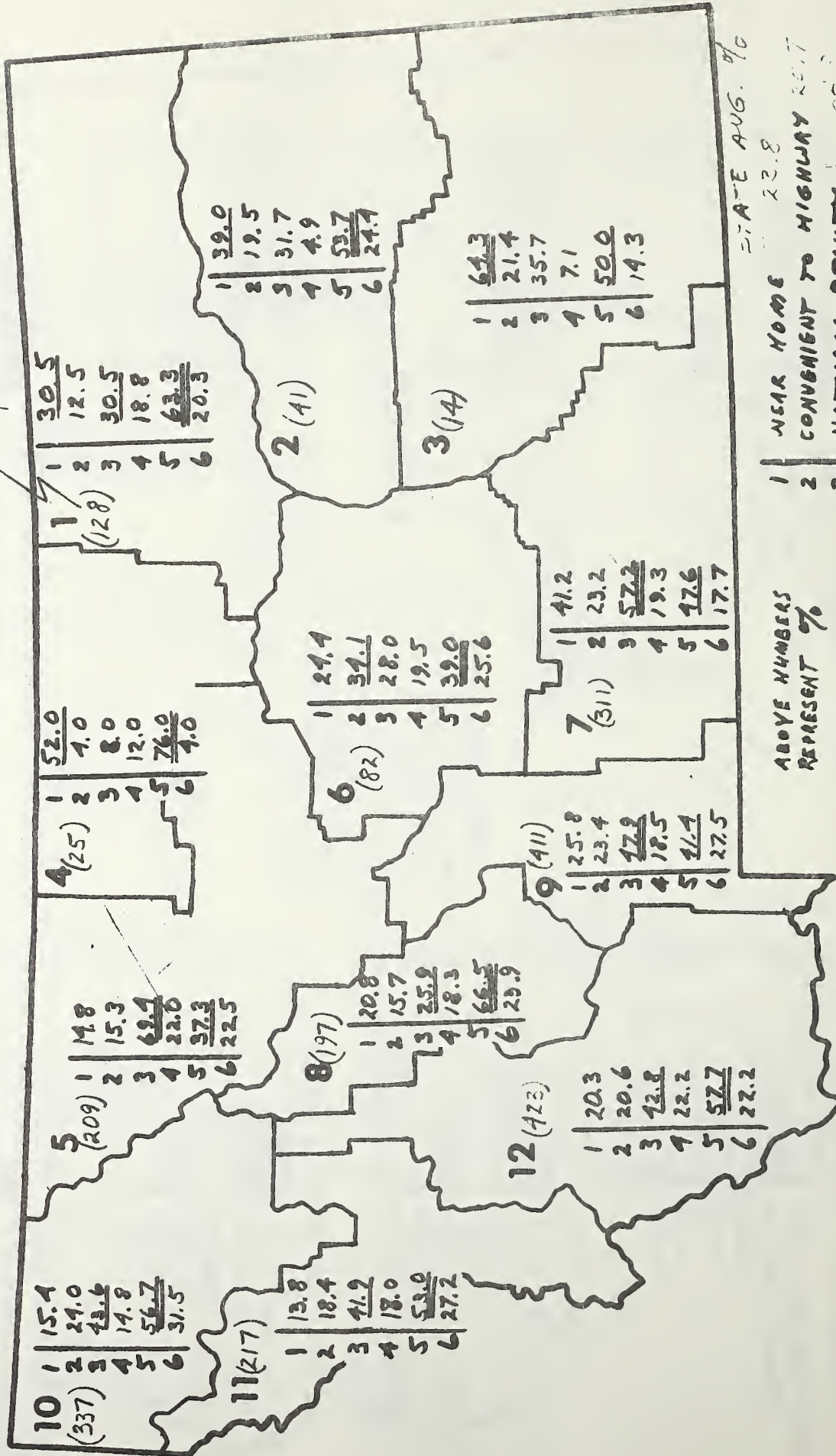


STATE PLANNING REGIONS

Reasons for Selecting Recreation Areas

Question 3

no. of returns



ABOVE NUMBERS
REPRESENT %

NUMBER IN PARENTHESES
= NO. OF RESPONSES
IN THAT PLANNING REG.

STATE AVE. %

- 1 NEAR HOME 22.8
- 2 CONVENIENT TO HIGHWAY 20.7
- 3 NATURAL BEAUTY 18.7
- 4 RECOMMENDED 18.7
- 5 NEAR DESIRED ACTIVITY 21.7
- 6 OTHER REASONS 21.3

Question 3

Reasons for Selecting Recreation Areas by Agency or Administrator

NATIONAL PARK SERVICE

	%
1	3.9
2	12.7
3	<u>67.6</u>
4	17.2
5	<u>12.3</u>
6	26.0

(204)

BUR. SPORT FISH & WILDLIFE

	%
1	<u>60.0</u>
2	40.0
3	<u>60.0</u>
4	<u>10.0</u>
5	<u>60.0</u>
6	20.0

(5)

U. S. FOREST SERVICE

	%
1	25.2
2	21.5
3	<u>55.5</u>
4	<u>20.0</u>
5	<u>45.0</u>
6	24.7

(1,217)

MONTANA FISH & GAME DEPT

	%
1	<u>22.4</u>
2	22.1
3	25.5
4	18.0
5	<u>62.3</u>
6	22.7

STATE (777)
ASB.

23.8 %

1	NEAR HOME
2	CONVENIENT TO HIGHWAY
3	NATURAL BEAUTY
4	RECOMMENDED
5	NEAR DESIRED ACTIVITY
6	OTHER REASONS

20.7

44.8

18.7

51.7

24.3

BUREAU OF LAND MANAGEMENT

	%
1	13.1
2	26.2
3	<u>31.1</u>
4	13.7
5	<u>42.5</u>
6	34.7

(61)

OFFICE OF THE STATE FORESTER

	%
1	0.0
2	20.0
3	<u>70.0</u>
4	20.0
5	<u>50.0</u>
6	20.0

16,

ARMY CORPS OF ENGINEERS

	%
1	<u>31.2</u>
2	6.5
3	24.7
4	14.3
5	<u>25.3</u>
6	15.6

(77)

INDIAN RESERVATIONS

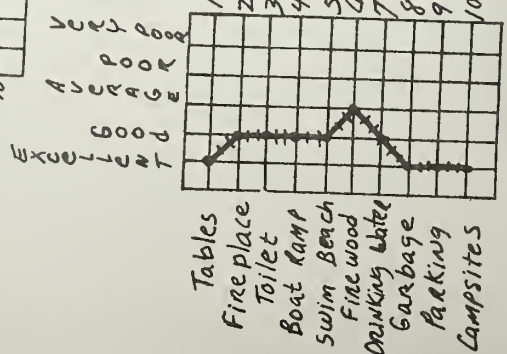
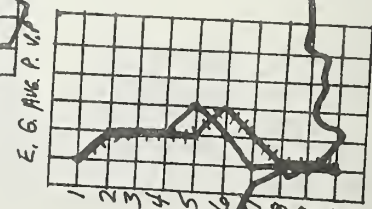
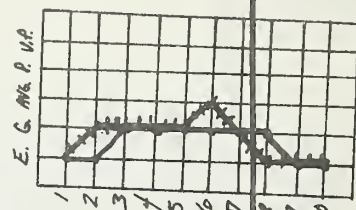
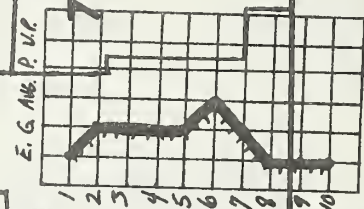
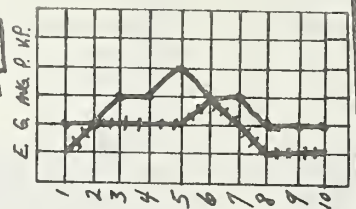
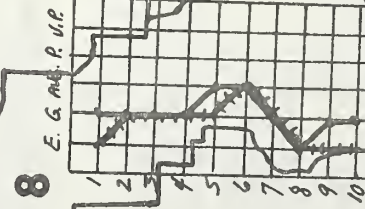
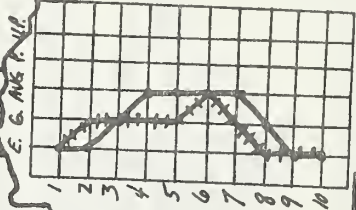
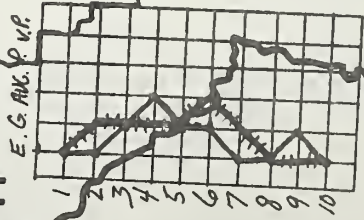
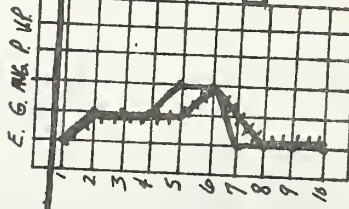
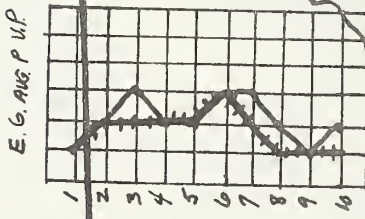
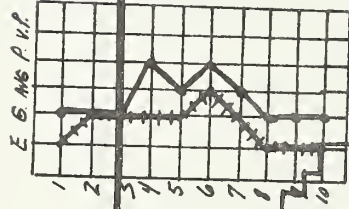
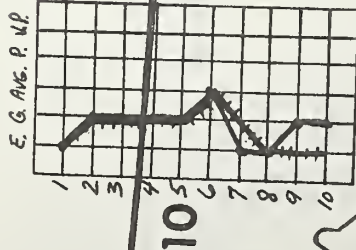
	%
1	18.2
2	22.7
3	29.5
4	15.9
5	<u>59.1</u>
6	34.1

NO #
RESERVE - 2,

RESERVE - 2,
RESERVE - 2,
RESERVE - 2,

Conditions of Facilities at Recreation Areas

STATE PLANNING REGIONS



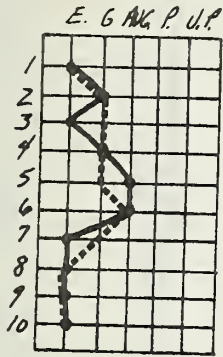
state Average +++++
Planning Region —

- Tables
- Fireplace
- Toilet
- Boat Ramp
- Swim Beach
- Firewood
- Drinking Water
- Garbage
- Parking
- Campsites

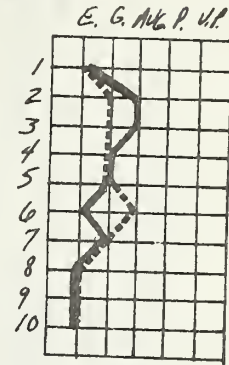
CONDITIONS OF FACILITIES AT RECREATION AREAS by Agency or Administrator

National Park Service

BUR. Sport Fish. + Wildlife

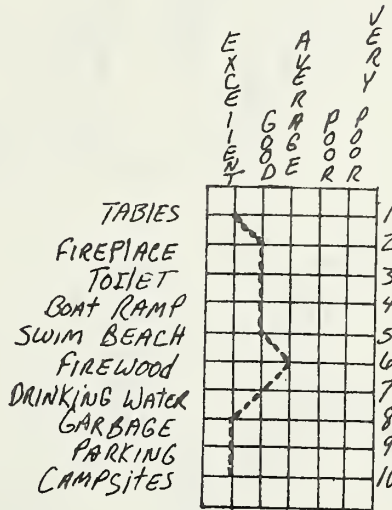
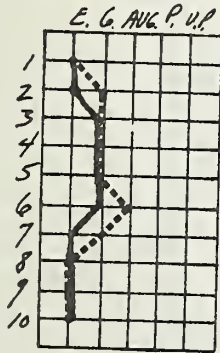


STATE AVG.
AGENCY —

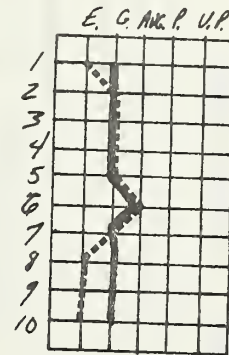


Question 4

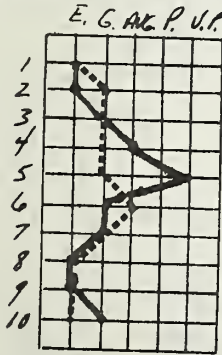
U.S. Forest Service



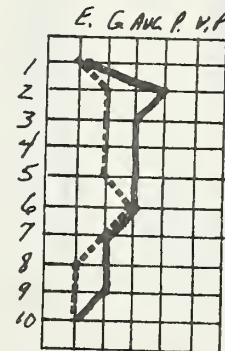
Montana Fish + Game Dept.



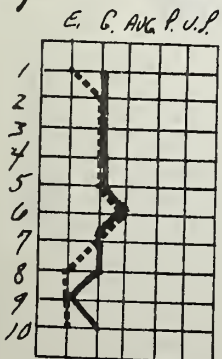
Bureau of Land Management



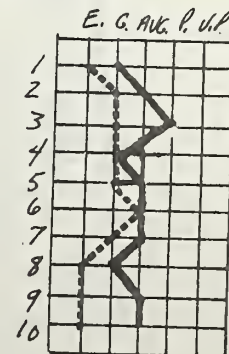
Office of the State Forester



Army Corp of Engineers

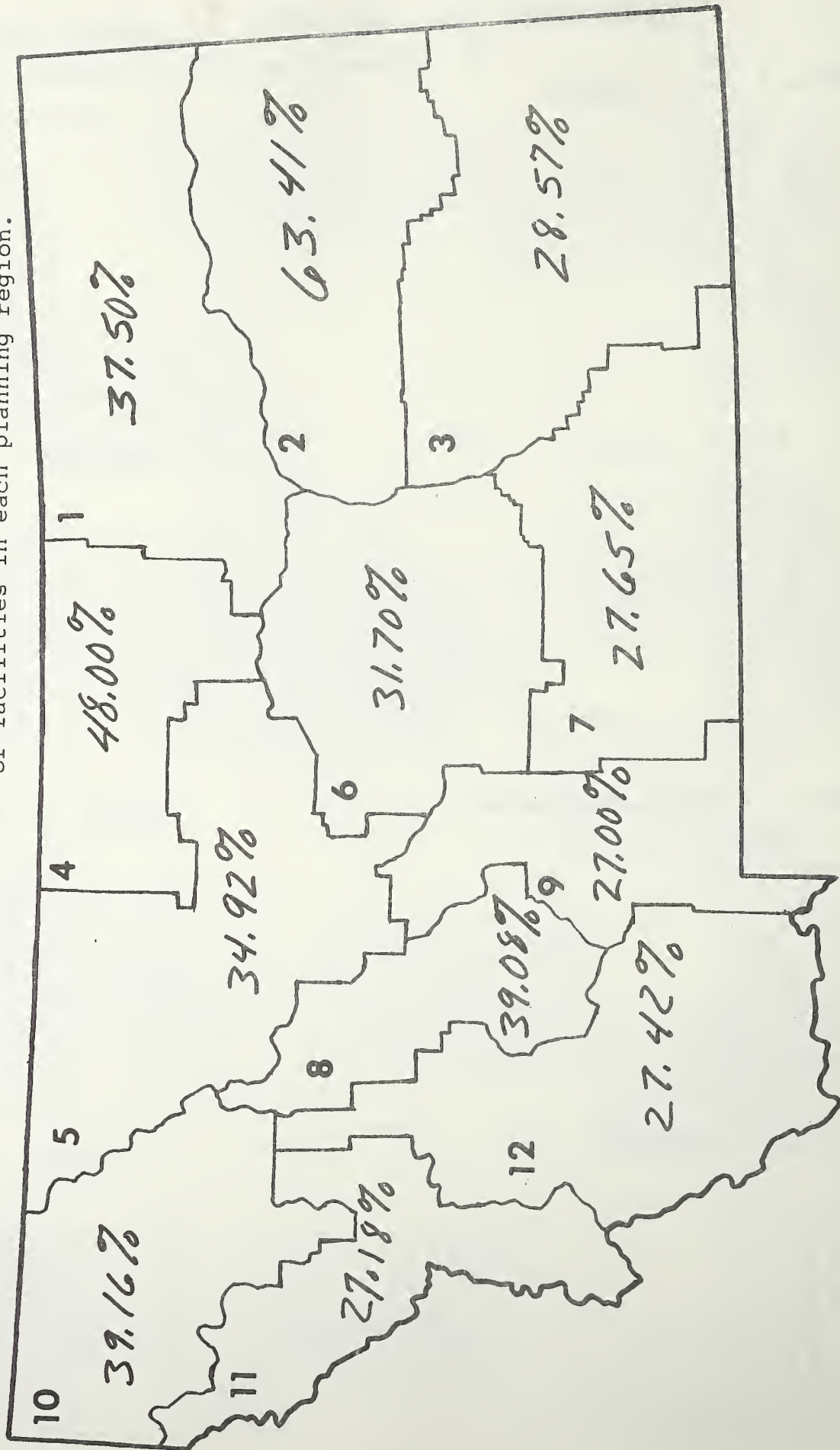


Indian Reservations



STATE PLANNING REGIONS

% = Number of recreationists indicating
a need for added recreation activities
or facilities in each planning region.



National Park Service

35.78%

% = Number of recreationists indicating a need for added recreation activities or facilities in a particular agency's recreation areas.

Bureau Sport Fisheries & Wildlife

40.00%

U.S. Forest Service

24.63%

Montana Fish & Game Dept.

41.10%

Bureau of Land Management

36.06%

Office of the State Forester

20.00%

Army Corp of Engineers

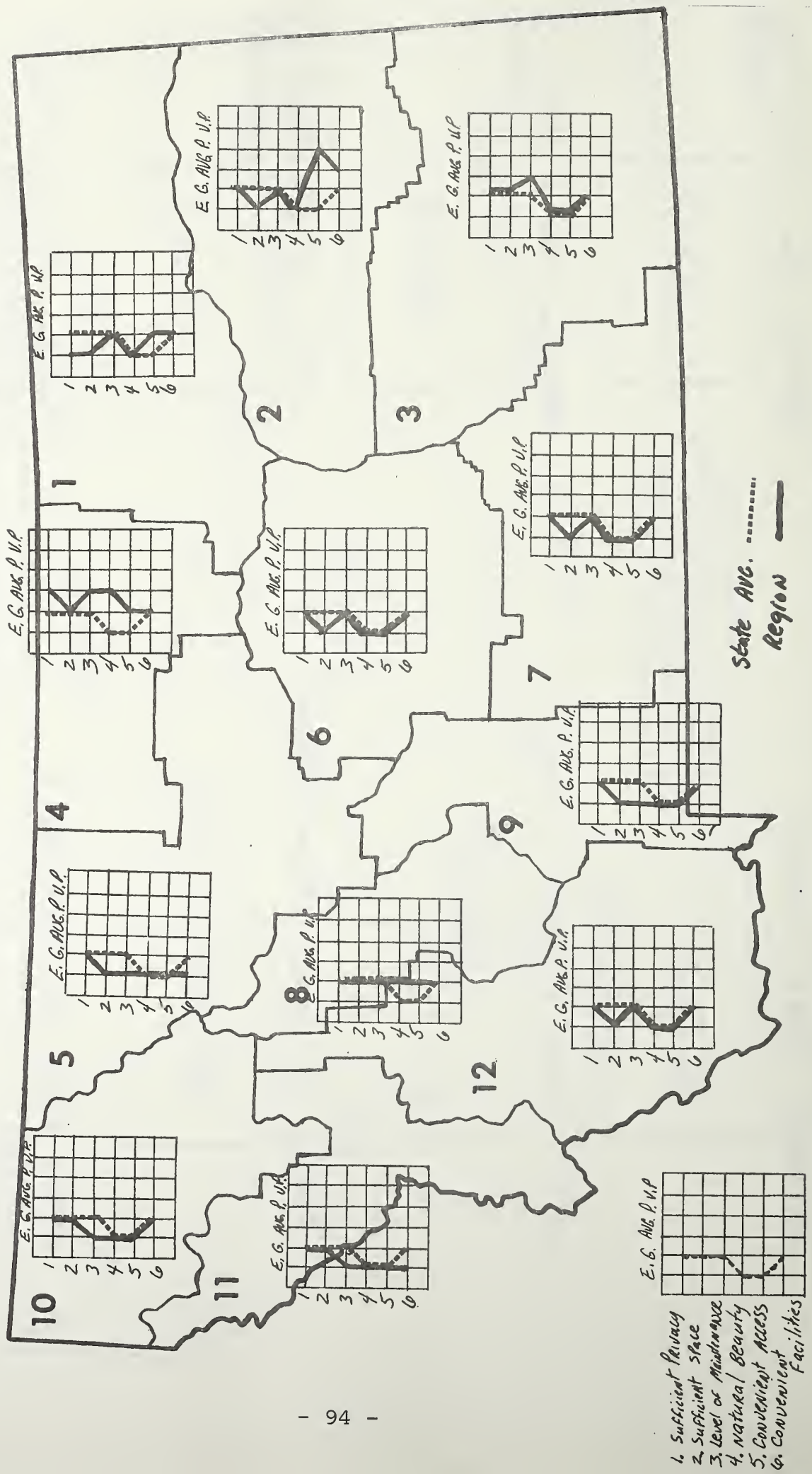
38.96%

Indian Reservations

50.00%

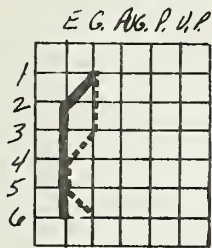
STATE PLANNING REGIONS

Question 6 Condition of Environmental Factors at Recreation Areas



Condition of Environmental Factors at Recreation Areas According to Agency or Administrator

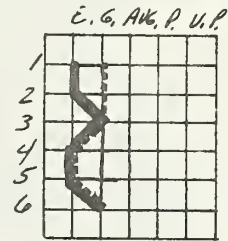
National Park Service



State Average

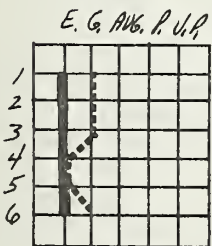
AGENCY OR
ADMINISTRATOR ———

Bureau of Sport Fisheries + wildlife

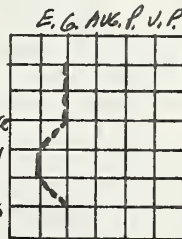


Question 6

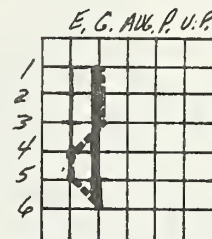
U.S. Forest Service



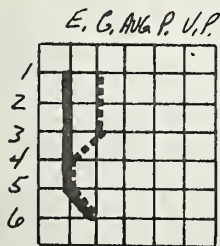
1. Sufficient Privacy
2. Sufficient Space
3. Level of Maintenance
4. Natural Beauty
5. Convenient Access
6. Convenient Facilities



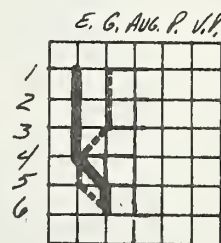
Montana Fish + Game Department



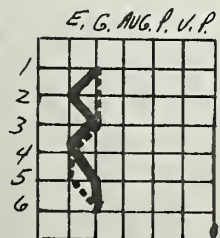
Bureau of Land Management



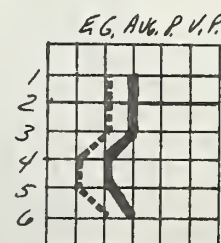
Office of the State Forester



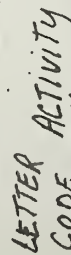
Army Corp of Engineers



Indian Reservations



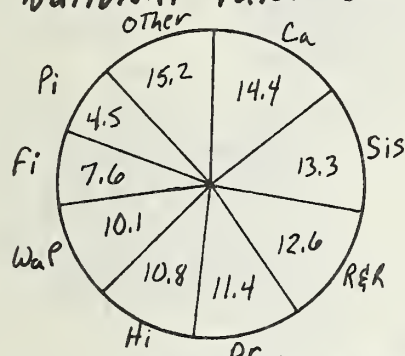
Question 7
Part 1



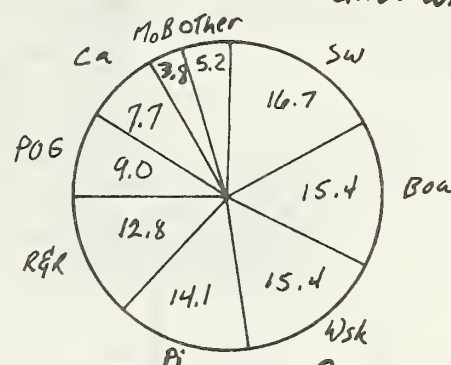
CODE	STATE	ACTIVITY
MOB 7.1	Motor Bike Riding	POB
WSK 7.1	Water Skiing	BOB
R&R 17.1	Resting and Relaxing	SW
Ca. 8.6	Camping	SIS
Fi. 11.0	Fishing	SIS
Wal. 8.1	Walking for Pleasure	H
Pi. 6.8	Picnicking	
Sis. 6.8	Sightseeing	
Hi. 6.3	Hiking	
Dr. 5.0	Driving for Pleasure	
Sw. 5.5	Swimming	
Boa. 4.9	Boating with Motor	
POG 4.1	Playing Outdoor Games	
BCI 4.8	Rock Tumbler Tumbling	

EACH Activity's Portion OF All outdoor Recreation ac- cording to Administrative Level

National Park Service

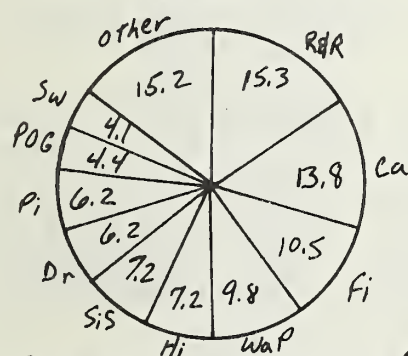


Bureau of Sports Fisheries and Wildlife



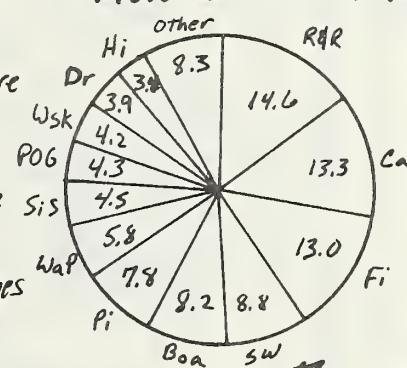
Question 7
Part I

U.S. Forest Service

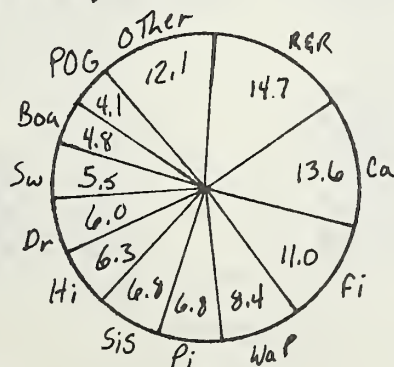
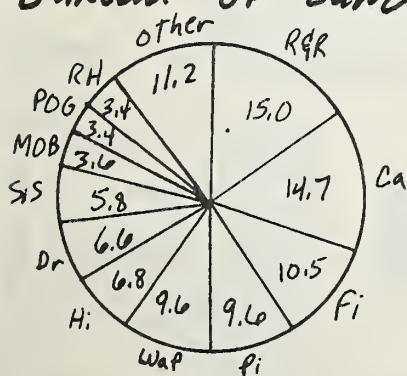


- LETTER CODE ACTIVITY
1. R&R ... Resting and Relaxing
 2. Ca ... Camping
 3. Fi ... Fishing
 4. Wap ... Walking for Pleasure
 5. Pi ... Picnicking
 6. Sis ... Sight seeing
 7. Hi ... Hiking
 8. Dr ... Driving for Pleasure
 9. Sw ... Swimming
 10. Boa ... Boating with Motor
 11. POG ... Playing Outdoor Games
 12. MoB ... Motor Bike Riding
 13. WSK ... Water Skiing

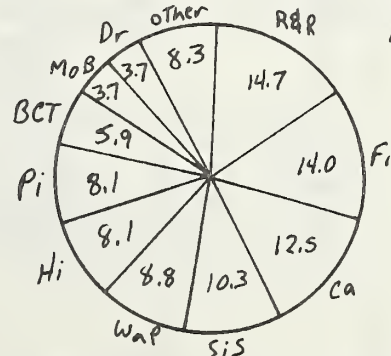
Montana Fish and Game Dept.



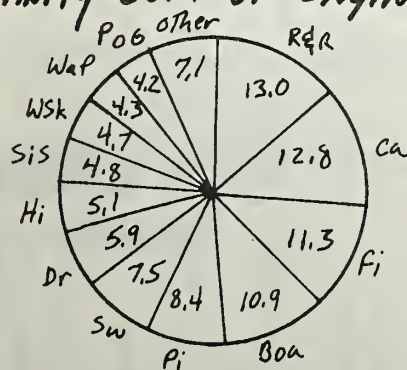
Bureau of Land Management



Office of the State Forester

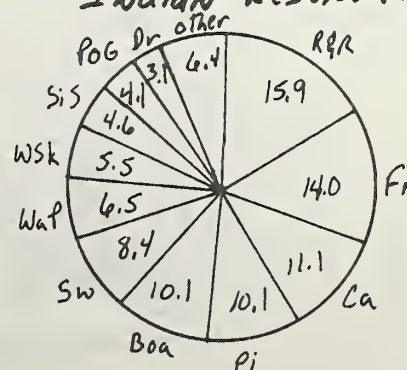


Army Corp of Engineers



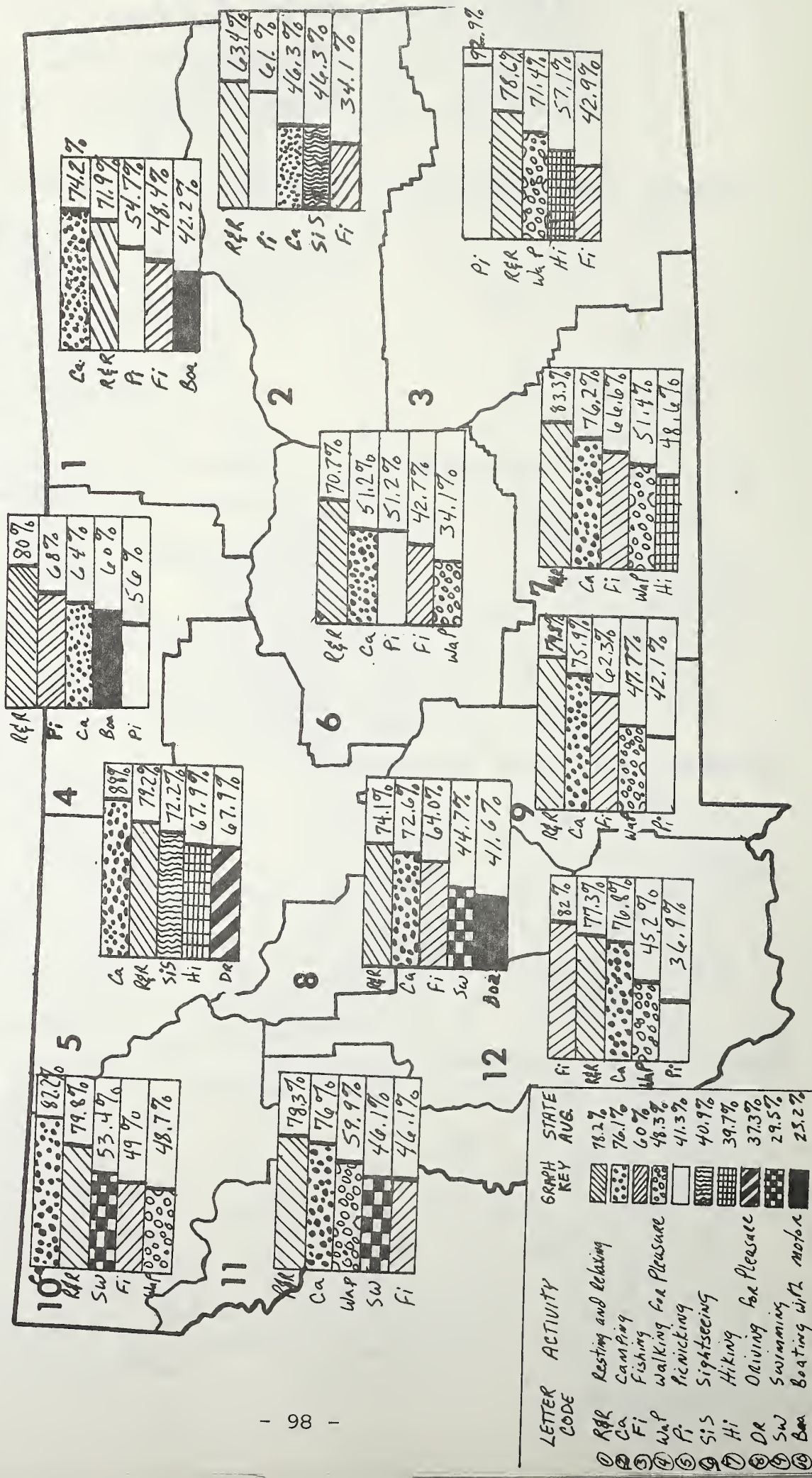
STATE AVERAGE

Indian Reservations



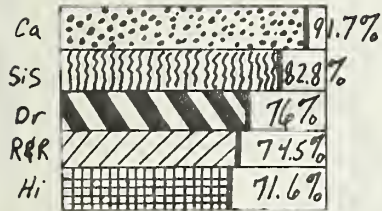
STATE PLANNING REGIONS

—TOP 5 IN EACH PLANNING REGION

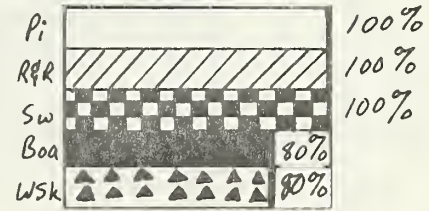


Frequency of Participation in Outdoor Recreation Activities according to Administrative Level

National Park Service

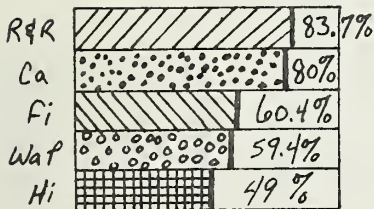


Bureau of Sports Fisheries and Wildlife

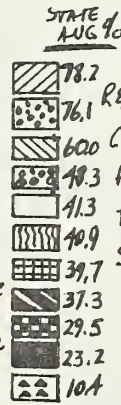


Question 7
Part II

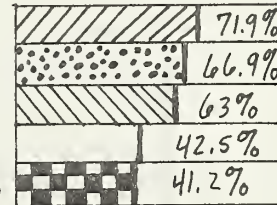
U.S. Forest Service



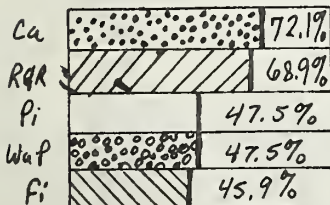
- ① R&R.....Resting & Relaxing
- ② Ca.....Camping
- ③ Fi.....Fishing
- ④ Wap.....Walking for Pleasure
- ⑤ Pi.....Picnicking
- ⑥ Sis.....Sightseeing
- ⑦ Hi.....Hiking
- ⑧ Dr.....Driving for Pleasure
- ⑨ Sw.....Swimming
- ⑩ Boa.....Boating with motor
- ⑪ Wsk.....Water Skiing



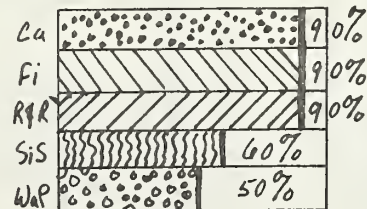
MONTANA Fish and Game Dept.



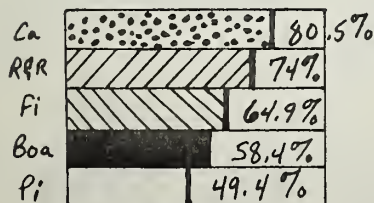
Bureau of Land Management



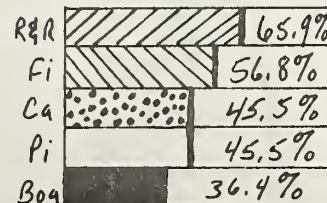
Office of the State Forester



ARMY CORP OF ENGINEERS

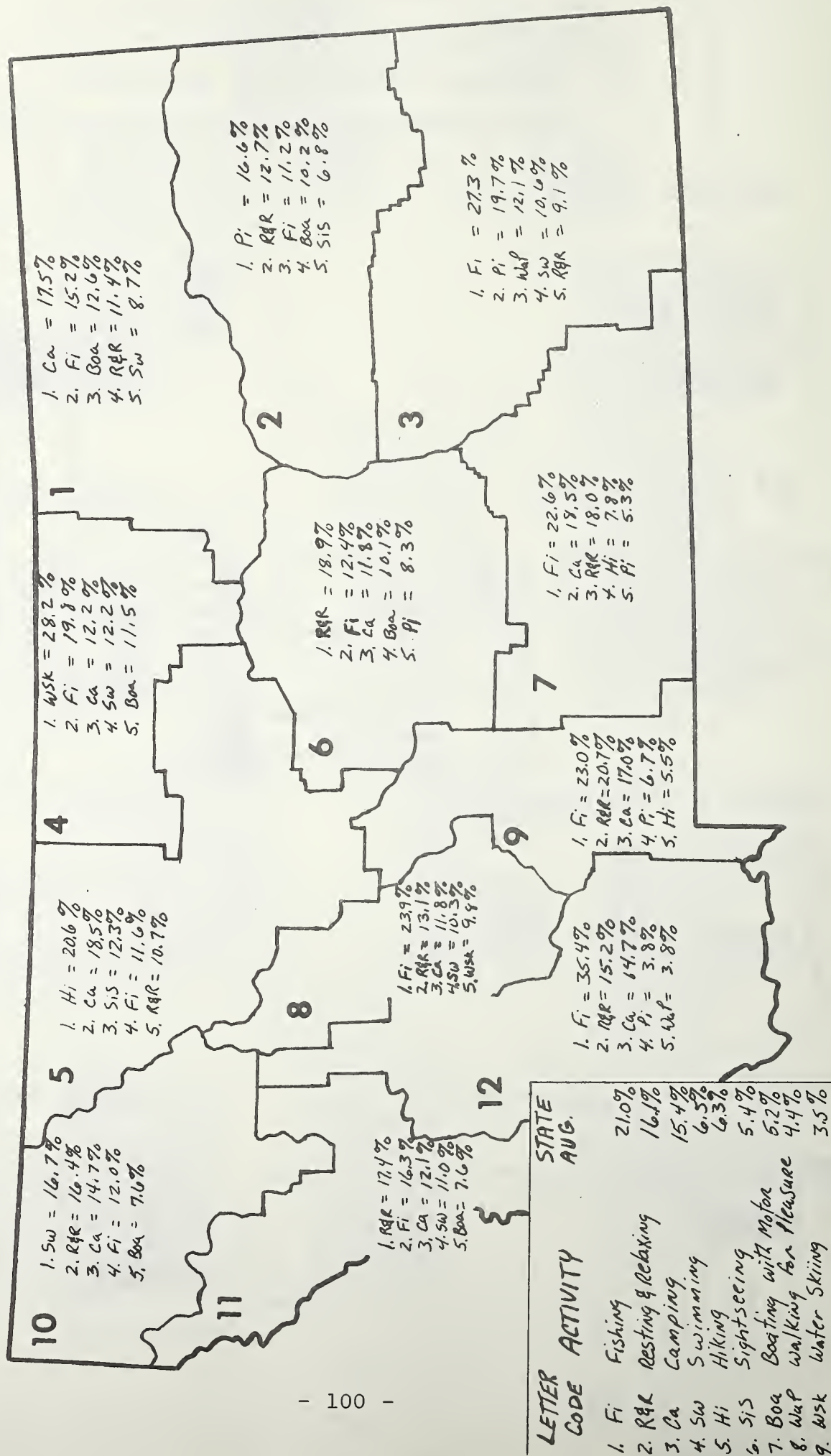


Indian Reservations



STATE PLANNING REGIONS

Question 8 Preferences for Types of Outdoor Activities Using Weighted Percentages



National Park ServiceOR AGENCYBureau of Sports Fisheries & Wildlife

1. Hi = 23.5%
2. Ca = 16.9%
3. SiS = 16.8%
4. Fi = 11.7%
5. R&R = 7.1%

U.S. Forest Service

1. Fi = 20.0%
2. R&R = 19.3%
3. Ca = 16.7%
4. Hi = 6.7%
5. WaP = 5.3%

Bureau of Land Management

1. Ca = 22.7%
2. Fi = 20.9%
3. R&R = 14.4%
4. MoB = 7.6%
5. Hi = 7.6%

Army Corp of Engineers

1. Fi = 20.1%
2. Boa = 17.2%
3. Ca = 16.3%
4. R&R = 10.9%
5. Sw = 10.2%

LETTER
CODE

ACTIVITY

STATE

AUG.

1. Fi	Fishing	21.0%
2. R&R	Resting and Relaxing	16.1%
3. Ca	Camping	15.4%
4. Sw	Swimming	6.5%
5. Hi	Hiking	6.3%
6. SiS	Sightseeing	5.4%
7. Boa	Boating with Motor	5.2%
8. WaP	Walking for Pleasure	4.4%
9. Wsk	Water Skiing	3.5%
10. MoB	Motor Bike Riding	2.2%
11. Dr	Driving for Pleasure	2.1%
12. BCT	Back Country Touring	1.9%
13. PoG	Playing Outdoor Games	1.2%

Montana Fish and Game Dept.

1. Fi = 25.6%
2. R&R = 14.0%
3. Ca = 12.2%
4. Sw = 11.9%
5. Boa = 8.1%

Office of the State Forester

1. Fi = 28.3%
2. Ca = 16.7%
3. R&R = 15.0%
4. MoB = 8.3%
5. BCT = 8.3%

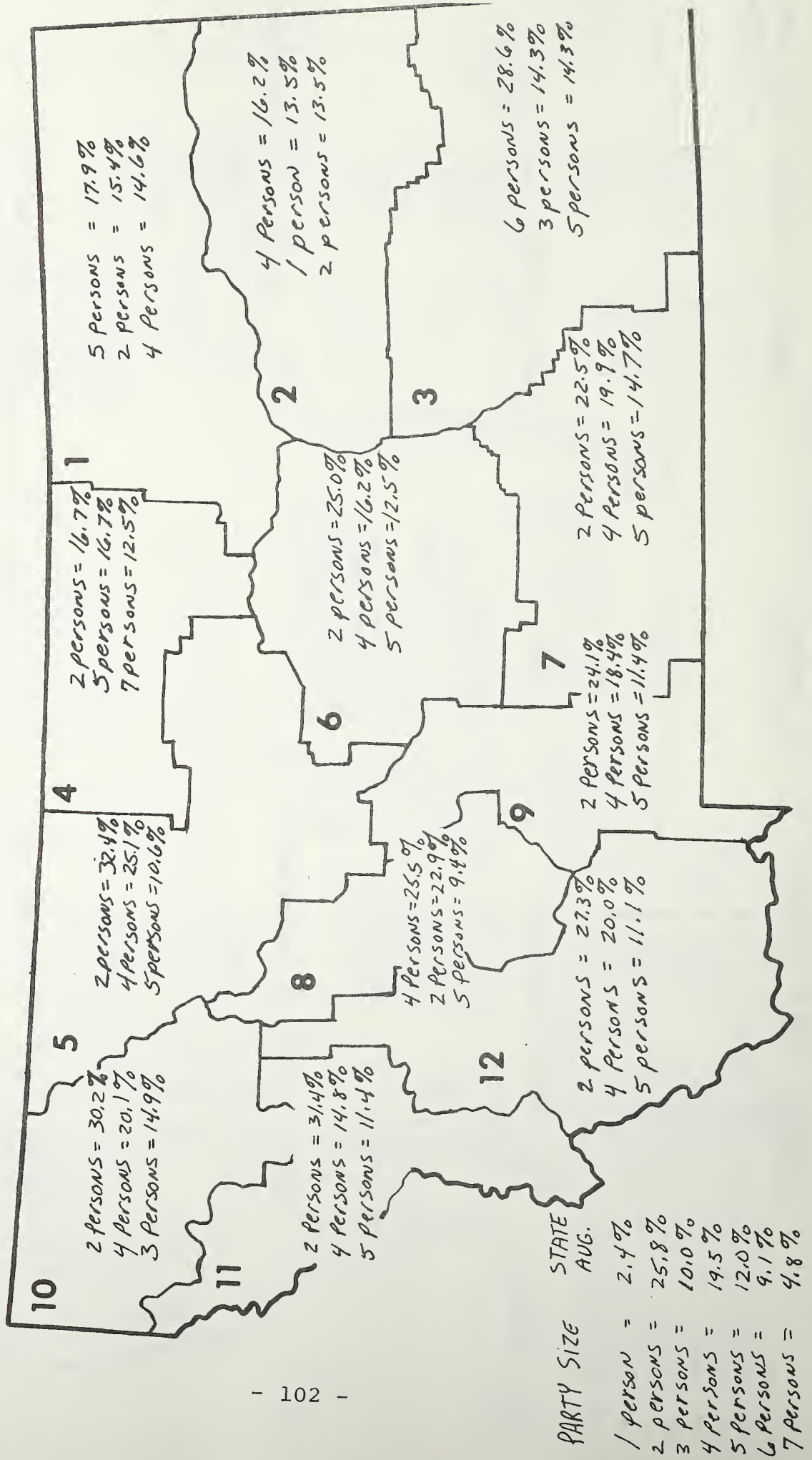
Indian Reservations

1. Fi = 24.9%
2. Boa = 15.6%
3. R&R = 14.5%
4. Sw = 12.1%
5. Ca = 11.0%

STATE PLANNING REGIONS

Age Composition of Recreating Parties

Question 9



National Park Service

Bureau of Sports Fisheries & Wildlife

2 Persons = 41.6%
 4 Persons = 24.3%
 3 Persons = 9.9%

2 Persons 20%
 3 Persons 20%
 12 Persons 20%
 14 Persons 20%
 17 Persons 20%

PARTY
SIZESTATE
AUG.

U.S. Forest Service

Montana Fish & Game Dept.

2 Persons = 25.3%
 4 Persons = 19.4%
 5 Persons = 12.7%

2 Persons = 25.8%
 3 Persons = 10.0%
 4 Persons = 19.5%
 5 Persons = 12.0%
 6 Persons = 9.1%
 11 Persons = 1.2%
 12 Persons = 1.1%
 14 Persons = 0.7%
 17 Persons = 0.3%

Bureau of Land Management

4 Persons = 23.3%
 5 Persons = 21.7%
 2 Persons = 20.0%

Office of the State Forester

6 Persons = 44.4%
 4 Persons = 33.3%
 3 Persons = 11.1%
 11 Persons = 11.1%

* Denotes a tie in Ranking
 the top Three of Each Agent
 or Administrator, in Arranging at the third Place.

Army Corp of Engineers

2 Persons = 23.0%
 5 Persons = 14.9%
 4 Persons = 10.8%
 6 Persons = 10.8%

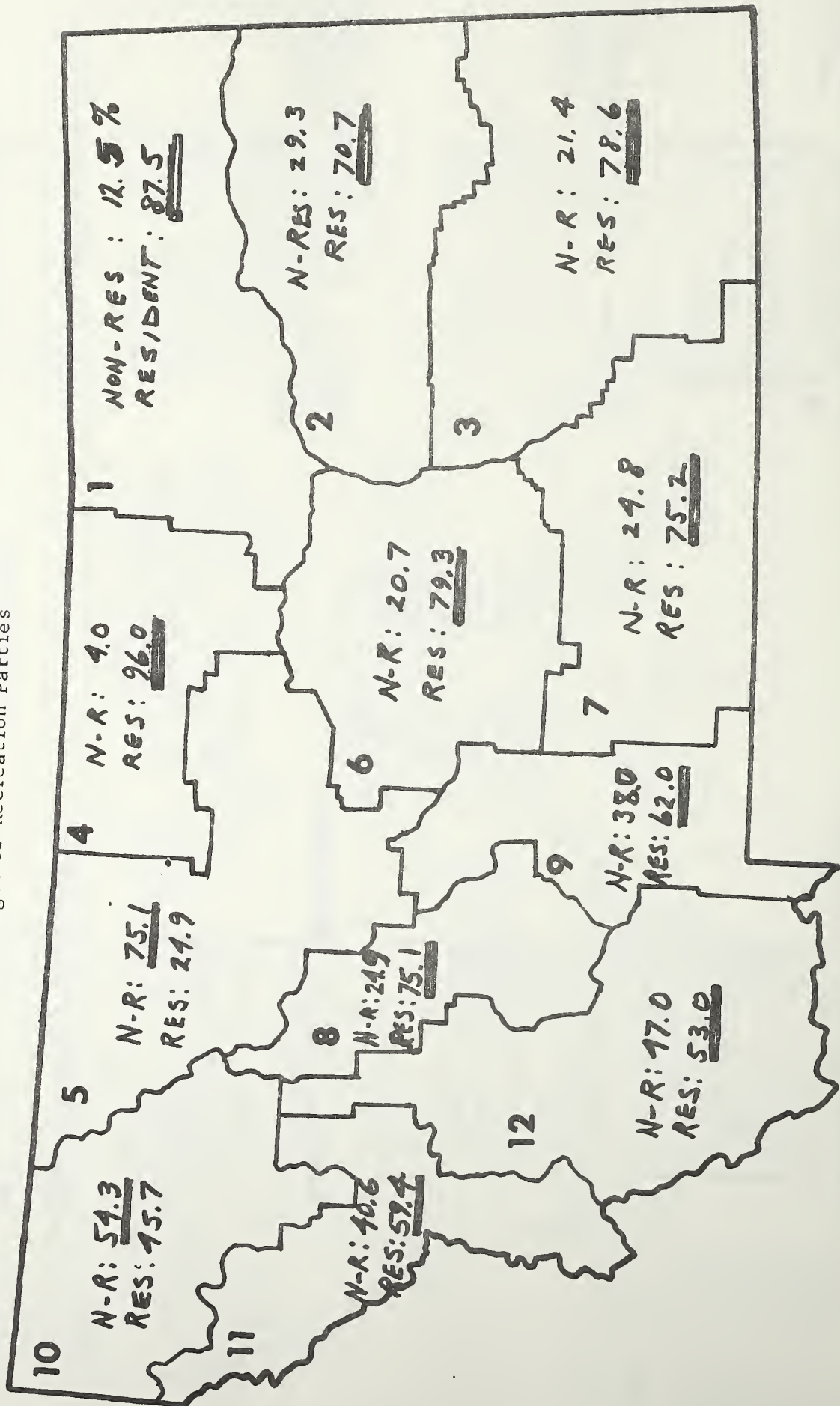
Indian Reservations

4 Persons = 23.3%
 3 Persons = 16.3%
 5 Persons = 16.3%

STATE PLANNING REGIONS

Question 10

Origin of Recreation Parties



TOTAL N-RES: 39.9 %
RES: 60.1 %

N. P. S.

%

N-RES: 89.2
RES: 10.8

U. S. F. S.

N-RES: 38.7
RES: 61.3

B. L. M.

N-R: 17.5
RES: 52.5

ARMY

N-R: 15.6
RES: 83.1

B. S. F. & W.

%

N-R: 0.0
RES: 100.0

F & G

N-R: 30.5
RES: 69.3

STATE FOR.

N-R: 10.0
RES: 90.0

INDIAN RES

N-R: 52.3
RES: 47.7

SITE RESPONDENTS INDICATING:

- 1) SPECIFIC AREAS THEY ENJOY
MOST, OR AREA THEY WISH TO VISIT

85.8% answered

- 2) AN OPINION OF OUTDOOR RECREATION
IN MONTANA

88.4% answered

(OPEN END QUESTIONS # 11 & 12)

THE STATE LAND BOARD STUDY

The State Lands survey which began during the summer of 1971 is making and will continue to make contributions to the supply element of the Montana Recreation Plan. It is enabling the State to objectively review parcels of land which it administers in terms of its recreation potential. This has never been done before in Montana, and it is hoped that eventually all six million acres of state land will be evaluated under this system. The survey has again been conducted during the 1972 summer and it is anticipated it will be continued in the following years. The system has proven to be a feasible, workable, simple method for assessing land for its recreation potential.

The State Land Board intends to submit the results of the two completed surveys to the Fish and Game Department next spring. Consultation between the two agencies will result in agreement and action to set aside for recreation certain state land parcels which merit such action. Eventually these parcels would be administered by the Fish and Game Department.

In addition, the State Land Board has been able to take action to halt a substantial logging project on a state land parcel of 3,500 acres near Red Lodge, based upon the first results of the 1971 Land Survey. In terms of environmental protection, the survey has been a piece de resistance.

W. W. Van

1971 MONTANA STATE LANDS RECREATION INVENTORY
PROJECT SUMMARY AND RESULTS

A total of 165 parcels of Montana State Trust Lands totaling approximately 81,350 acres were evaluated by the Recreation Potential Evaluation System during the summer of 1971 in cooperation with the Montana Fish and Game Department and the U.S. Bureau of Outdoor Recreation.¹ These parcels were selected from approximately 600 parcels which lie within the boundaries shown on the area map in fig. 1. The boundaries of the selection area were arbitrarily defined before the field season to be one township or range away from the Yellowstone River and its major tributaries. It was felt by representatives of the Department of State Lands and the Fish and Game Department that this boundary represented the area most likely to contain high value recreation land. The major tributaries which were included in the selection area were the Shields, Stillwater, Boulder, Clark Fork, Tongue and Powder Rivers. Several parcels along the Big Horn River were evaluated because of known values.

All of the state owned trust land within the boundaries shown on the area map were compiled in a master selection list and a selection of parcels to be evaluated during the 1971 inventory was made from this list. A selection was made from the list for two reasons:

- 1) Since the estimated evaluation rate was three parcels per day, evaluation of all the parcels would have taken over 200 man-days. It was estimated that the total time available would be 50 man-days (2½ month field season) or time for inspection of approximately 150 parcels.
- 2) The usefulness of the 1971 project to the State Land Department and the Fish and Game Department was not only in the development of an evaluation system but also in the location of parcels with a high number of unquantified environmental amenities and values. It was therefore considered not important to evaluate every parcel, as long as some investigation was made of each parcel in order to select what might be the parcels with the best potential.

1/ A parcel, for the purpose of the inventory, is defined as all of the contiguous state land within one section.

The evaluated parcels were selected by the primary use of air photos. Where air photos were not available, topographic maps were used, if coverage was available for the specific area. Where neither air photos or topographic maps were available the parcel was investigated by examination of lease appraisal sheets. The general method used for selecting the parcels was basically a process of elimination according to the following general criteria.

1. Eliminate parcel if completely agricultural.
2. Eliminate parcel if apparently flat or light rolling and vegetation is grass or grass-shrub with only a few scattered trees.
3. Eliminate parcel if vegetation is only grass or grass-shrub with level to light rolling topography, which may have numerous shallow or narrow coulees, and surface appears to have numerous alkali, hardpan, or shallow areas.
4. Do not eliminate any parcel with a possible live stream or river, or pond above 5 acres.
5. Do not eliminate any parcel with trees other than scattered trees.

By this general method, the final inspection list of 165 parcels was compiled. The air photos and topographic maps for each parcel were then compiled and parcel location and access maps were prepared.

The actual field season for the 1971 Montana State Land Recreation Inventory started on Monday, July 5, 1971. Dave Conklin, the Recreation Evaluator, started the parcel evaluations at Billings, Montana, worked upstream on the Yellowstone and completed the furthestest upstream parcel on August 3, 1971. Mr. Conklin then worked from the Montana-North Dakota border upstream along the Yellowstone and its tributaries to complete the field season in Billings on September 2, 1971. On August 3, Mr. Conklin was joined by Al Thompson and Norman Gyez of the Montana Fish & Game Department, and Bob Duncan of the Department of State Lands for a field discussion of the system. Again on August 24th, 25th field discussions were conducted in Red Lodge, with the additional help of Dale Haskins of the Bureau of Outdoor Recreation.

The field season proceeded with few problems other than access difficulties and vehicle break-downs. The evaluation system, which appears to be lengthy, actually took little time to conduct since each parcel has only a small fraction of the total possible rated characteristics. Evaluations averaged three parcels per day and two hours per parcel.

Final revision of evaluation guide, tabulation and classification of parcels, and writing of training guides for the system was done in the State Land office after the field season.

THE CLASSIFICATION SYSTEM

A simple fractional code system was chosen for the classification system. (See Fig. 2). The numerator is a letter code representing the total score from all of the categories and the denominator is a five letter code for each major category. Although in most cases the letter code for the total score would be sufficient to indicate the relative public use value of a parcel, parcels which have an exceptional score in one of the categories but a low score in all of the other categories would be lost in a single letter classification system. Two important qualities are given a special code in the numerator: evidence of recreational use (U) and possible historic value (H). Both of these qualities deserve special attention, regardless of total score.

The class limits for the total score code were chosen without any effort to be completely objective or to include detailed statistical manipulations. The scores for each evaluated factor, although for the most part based upon physical facts, are subjective rated valuations. Detailed statistical operations would not be justified on such a biased sample as the final 165 selected parcels. A frequency diagram of the total scores was constructed and used in the determination of the class limits for the total score code (Fig. 3). The lower limits for the "A" class was chosen primarily because of a small natural break in the frequency diagram and examination of the evaluation sheets for parcels with scores higher and lower which

showed subjective differences to the evaluator. How the limits were chosen is actually an unimportant matter because any attempt to classify aesthetic and recreational value characteristics of land must always remain a subjective decision. The class limits for the other letters and their meaning is shown in Fig. 2.

Thirty-one of the parcels, comprising approximately 18,623 acres, received the "A" (High Public Use Value) classification for total score. This represents 19% of the evaluated parcels and 5% of the total parcels in the inventory area. Effort toward preservation and development of public use values will be concentrated on these parcels. At a minimum, legislation should be sought to keep these parcels in permanent public ownership. Fifty-seven (23,599 acres) of the evaluated parcels have been classified as having Moderate Public Use Value ("B" class). This number represents 34% of the evaluated parcels and 9% of the parcels in the inventory area. Legislative declaration of permanent public ownership will be sought for these parcels, but development of public use will not be a primary management goal on these tracts. Protection of the public use values will, however, be a management goal for the Moderate Public Use Value Parcels. "C" or Low Public Use Value Parcels (84 parcels, 39,127 acres, 50.9% of evaluated parcels, 13% of parcels in inventory area) will receive no special public use management unless the parcel has historic or actual recreational use values. Table 1 contains a summary of the parcel classification.

Since the evaluated parcels were selected as the parcels which had the best preliminary potential for public use or recreational value, the assumption might be made that the non-field evaluated parcels would fall into the "C" or low public use value class. There might of course, be parcels which were not evaluated which fall into the "B" or even "A" class, but these would be a few in number. With this assumption, the results of the inventory would be: 5% "A" parcels, 9% "B" parcels and 86% "C" parcels in the inventory area. A listing of parcels with High Public Use Value or Moderate Public Use Value is found in Appendix 1.

The classification system is designed from a statewide point of view. It would be possible and desirable of course, from a regional planning point of view to rank the parcels by a classification based upon the scores of a parcel in one county of one small watershed. But the State Land Department is not

involved in administering regional plans. It is, however, responsible under multiple use management and environmental policy legislation for protecting recreational resource values wherever they exist on state trust land.

The coding system for the denominator is a five letter code-one letter for each major category in the evaluation system: Topography, Vegetation, Water, Off-Site and Other On-Site Positive Factors, and Scenery (See Fig. 2). The code enables one to see in a general way what aspects of a particular tract contributed to High Public Use Value classification or a Low Public Use Value classification. The class limits for the "A" class was chosen as the upper 10% of parcels; the "B" class is above average; and the "C" class is average or below. Because the lowest scoring parcel in the upper 10% group was often one of several parcels with the same score, the actual percentage of "A" tracts varies from 10%. This is not important, however, since any score boundary on an "A" topography or water class, etc, is an arbitrary limit. As more parcels are evaluated in future field seasons this classification will be refined. Table 1 contains a summary of the major category classifications.

Appendix II contains a listing of parcels which received a Low Public Use Value classification in total score but received an "A" classification in any major category or had some historical value or actual public use evidence. Appendix I, Summary List of Parcels with A or B classification, also contains notation of possible historic value or actual public use evidence. Any evidence of actual public use of a parcel gives the tract a special value. There is no recreation evaluation system that will fit all of the unique characteristics of a parcel which makes people actually use the parcel for recreation. Any evidence of actual use gives the parcel a special value beyond any standardized classification. The qualities of a parcel, whether they be physical or geographical, which attract people to use a parcel are unique qualities to that parcel, especially if some parcels which received low rating are receiving actual use. Table 2 contains a summary of the parcels in each classification which had some evidence of public use. 18% of all evaluated parcels showed some evidence of public use.

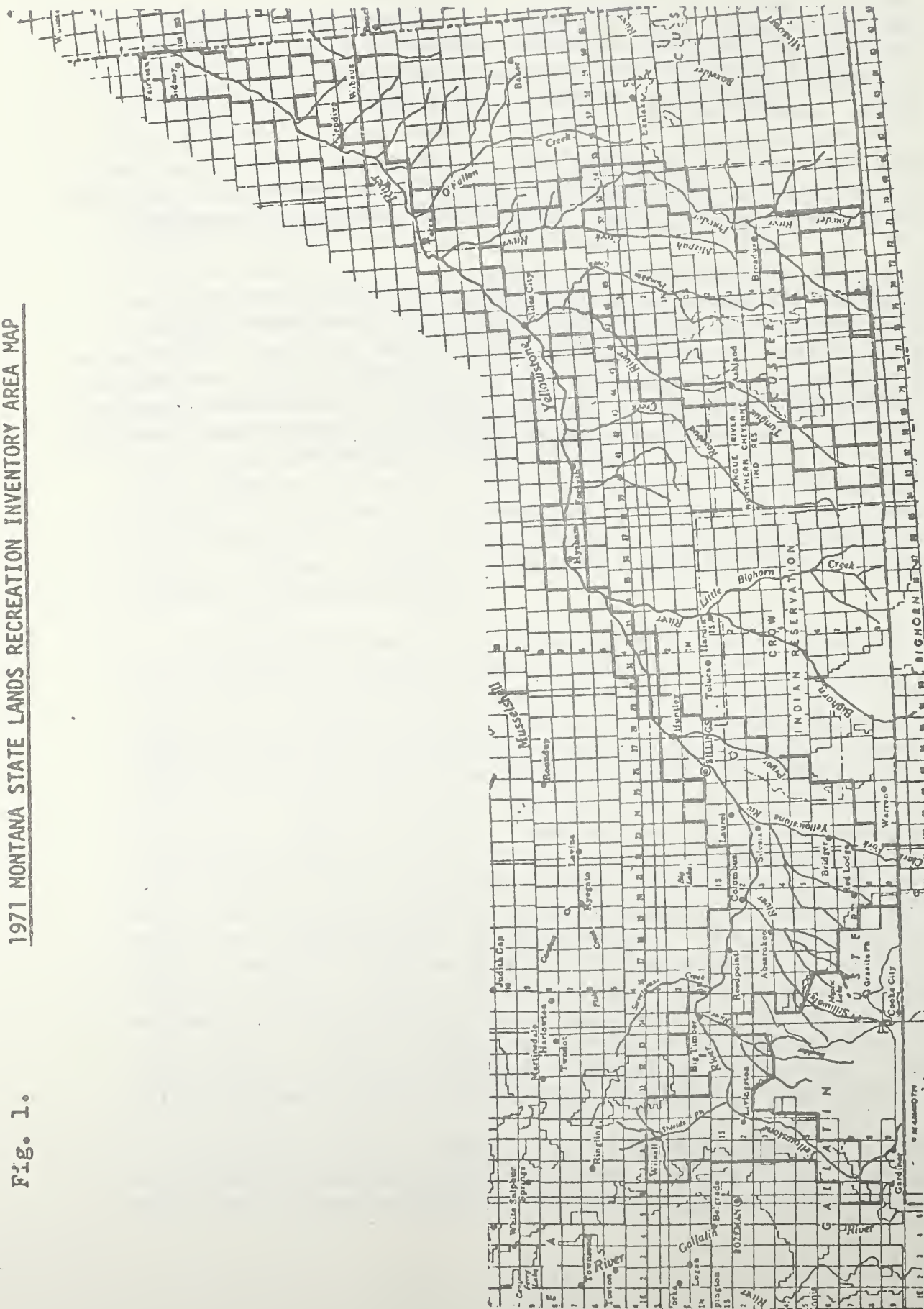
Historic values found on state land include both possible archeologic areas and cultural areas. There is no way to be sure that an archaeologic or historic site does not exist on a

parcel, because the evaluation system was not designed for a detailed examination of these values. The evaluator was not a trained archeologist, but where he found some evidence of possible archeologic value this was noted on the recording form. Historic value information was obtained from discussion with lessees, examination of topographic and other maps, and discussion with National Park Service personnel. Appendix III contains a parcel listing and description of possible archeologic and historic values.

The 1971 Montana State Lands Recreation Inventory has supplied the State Land Department with necessary information to protect and develop recreational values on state owned trust land. This information will be supplied to the Recreation and Parks Division of the Montana Fish and Game Department so that they will be in better position to understand the basic supply of recreational opportunities in Montana.

1971 MONTANA STATE LANDS RECREATION INVENTORY AREA MAP

Fig. 1.



SCALE 1" = 40 mi.

Fig. 2.

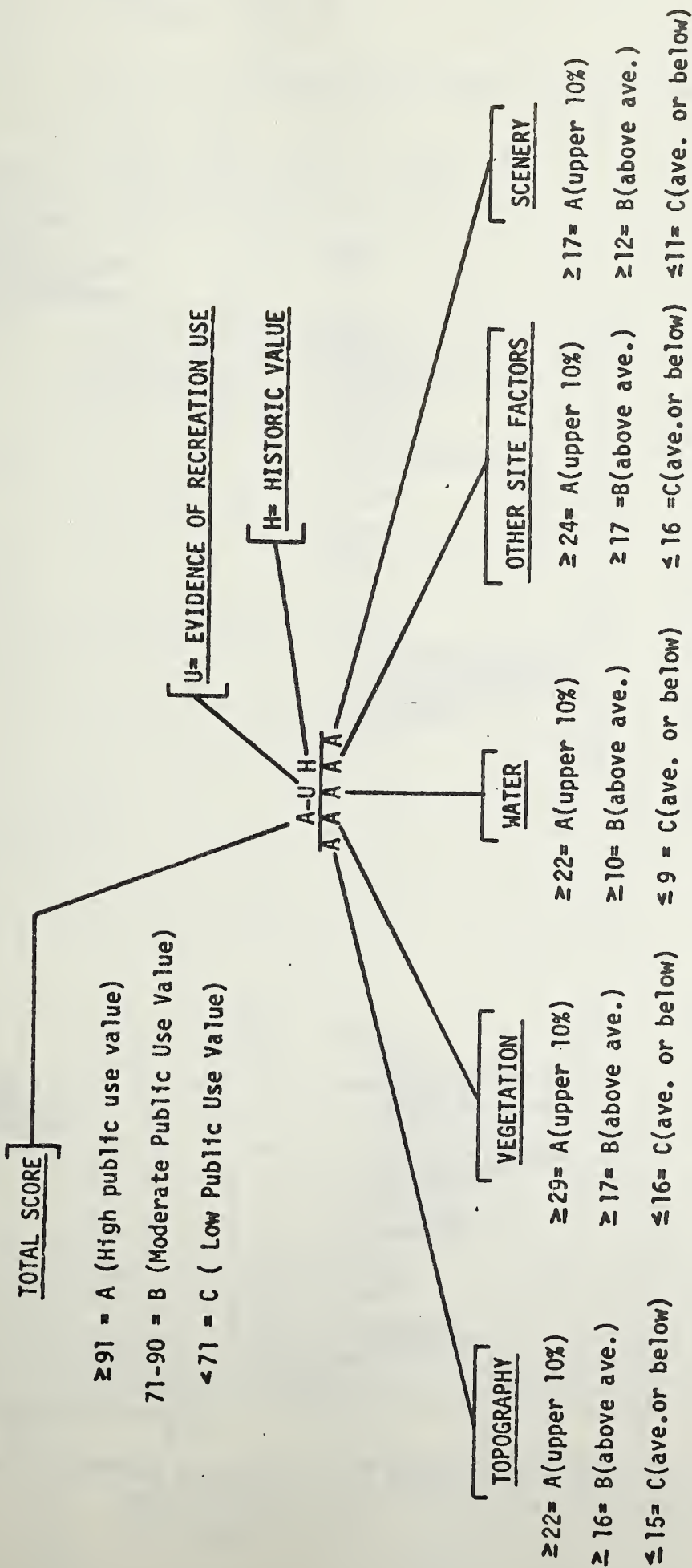


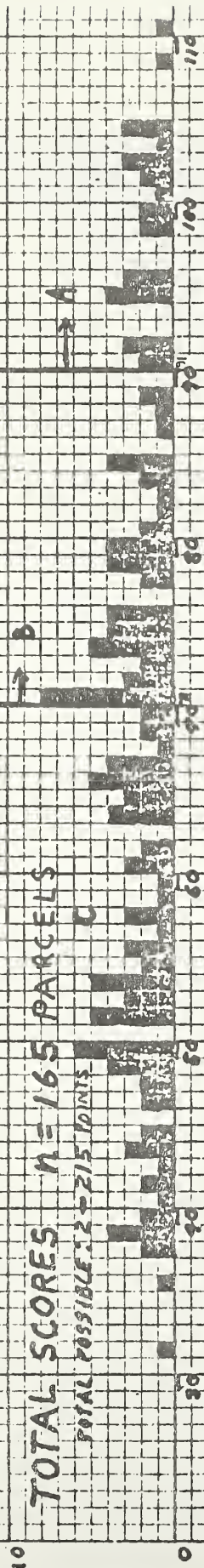
FIG 3

FREQUENCY DIAGRAM

1971 RECREATION POTENTIAL EVALUATION - ALL PARCELS

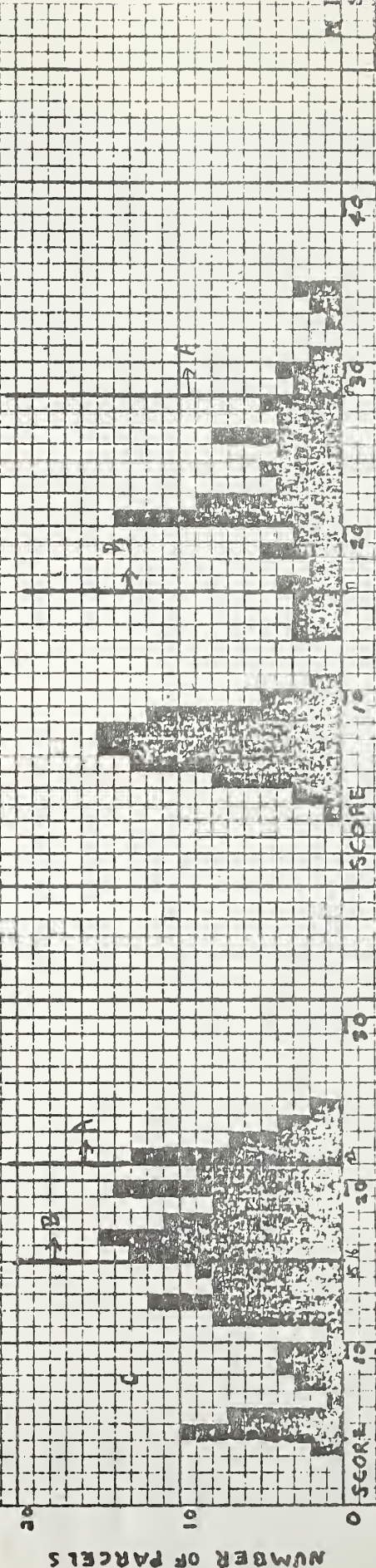
TOTAL SCORES $n=165$ PARCELS

TOTAL POSSIBLE: 2 = 215 POINTS



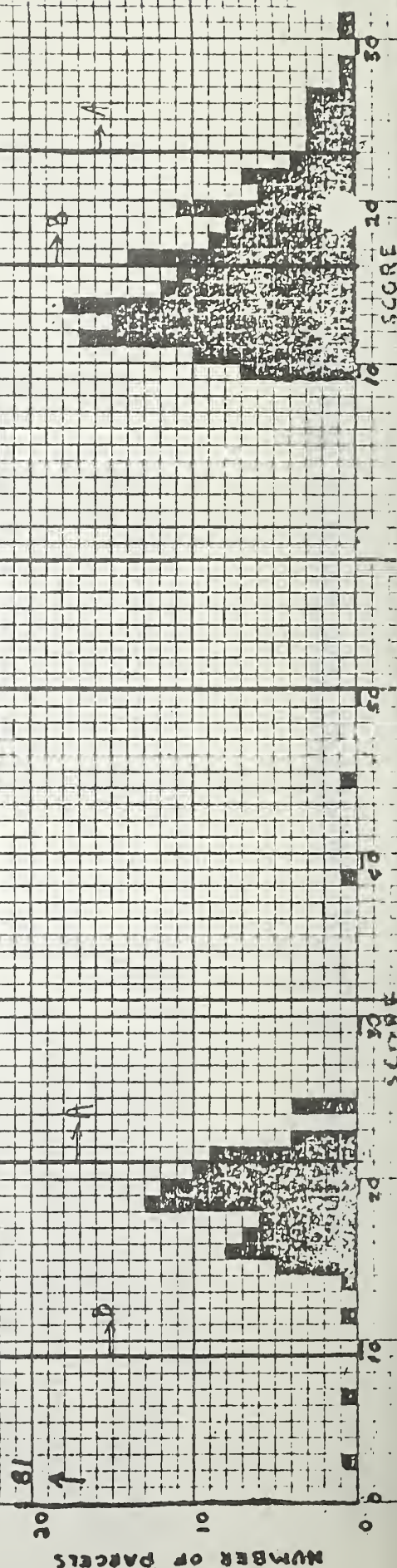
TOPOGRAPHY $n=165$

TOTAL POSSIBLE: 35 POINTS



WATER $n=165$ PARCELS

TOTAL POSSIBLE: 75 POINTS



OTHER SITE FACTORS $n=165$ PAR

TOTAL POSSIBLE: 45 POINTS

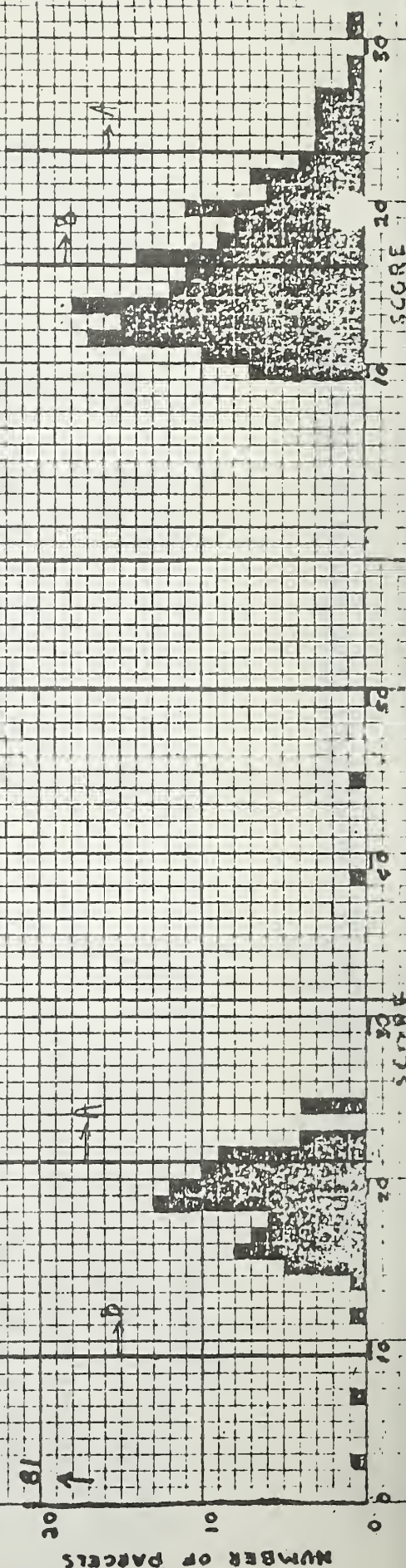


Table 1.

Summary of Parcel Classifications

Total Parcels Evaluated: 165
 Total Parcels in Inventory Area: 600

	<u>Class</u>	<u>Number</u>	<u>% of Evaluated Parcels</u>	<u>% of Parcels in Inventory Area</u>
Total Score:	A(High Public Use Value)	31	18.8	5%
	B(Moderate Public Use Value)	57	34.5	9%
	C(Low Public Use Value)	77	46.7	13% ¹
Topography:	A	26	15.7	
	B	70	42.4	
	C	69	41.8	
Vegetation:	A	15	9.1%	
	B	67	40.6%	
	C	83	50.3%	
Water:	A	22	13.3%	
	B	64	38.7%	
	C	79	47.8%	
Off-Site & Other On-Site Positive Factors:	A	16	9.6%	
	B	59	35.7%	
	C	90	54.5%	
Scenery:	A	20	12.1%	
	B	73	44.2%	
	C	72	43.6%	

1. If assumption is made that All unevaluated parcels in the inventory area were "C" class, the percentage would be 86% - "C" class.

Parcels with Possible Historic Value
or
Actual Public Use Evidence

<u>Class</u>	<u>Historic</u>		<u>Actual Public Use</u>	
	<u>Number</u>	<u>% of parcels in Class</u>	<u>Number</u>	<u>% of parcels in Class</u>
A	4	13%	18	58%
B	5	9%	10	17%
C	1	1%	2	3%
All Evaluated Parcels	10	6%	30	18%

Appendix I

Summary List of Parcels with A or B Classification

<u>Description</u>	<u>Acres</u>	<u>Total Score</u>	<u>Classification</u>	<u>Historical or Use Evidence</u>
All Sec.16 T6S-R17E	633.76	126	^{TOT} ^{UISC} <u>A-U</u> <u>BAACA</u> _{T V W OST S}	Numerous campsites along lakes & trail trails around lakes
All North of River Sec.16 T6N-R42E	200	119 <i>not on chart</i>	<u>A-U</u> <u>CBAAC</u>	Trash around Lake & River shore, diving board at Lake, Fire rings near Riv
All Sec.31 T7S-R19E	617.04	116	<u>A-U</u> <u>AAABB</u>	Saw sightseers & camp sites along creek.
N½ Sec.36 T4S-R15E	320	114	<u>A-U</u> <u>ABAAA</u>	Numerous campsites & turnouts along stream and road.
All Sec.16 T2S-R11E	640	113	<u>A-U</u> <u>ABABA</u>	Several campsites near Creek.
All Sec.6 T7S-R19E	614.54	111	<u>A-U</u> <u>AABBA</u>	2 fire rings on Burnt Fork Creek.
All Sec.16 T4S-R9E	596.72	109	<u>A</u> <u>BBAAB</u>	
All Sec.16 T8S-R6E	640	105	<u>A</u> <u>ABBBA</u>	
All Sec.16 T2S-R15E	640	105	<u>A-U</u> <u>AAACB</u>	Beer can, paper cups etc., along creek.
All Sec.16 T3S-R13E	640	105	<u>A-U</u> <u>ABABB</u>	Trails, cans & paper along Creek. Both sides of road are fenced.
All Sec.7 T7S-R19E	613.52	104	<u>A</u> <u>AABCA</u>	

<u>Description</u>	<u>Acres</u>	<u>Total Score</u>	<u>Classification</u>	<u>Historical or Use Evidence</u>
All except NE $\frac{1}{4}$ NE $\frac{1}{4}$ Sec.9 T7S-R19E	600	103	<u>A</u> BABCA	
All Sec.10 T7S-R19E	640	103	<u>A-H</u> BABCA	Old Cabin & part of wagon in NW $\frac{1}{4}$
N $\frac{1}{2}$ NW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$ Lots 1-4, 6-8 Section 36. T2S-R23E	351.50	103	<u>A-U</u> CAAAC	Laurel Rod & Gun Club, Sportsmans Park. Saw picnicker motorcyclists, fish ermen.
All Sec.36 T8S-R20E	640	102	<u>A-UH</u> BBBBA	U) Motorcycles & cars on trail. Camp sites & fire rings along creek. H) Meeteetsee Trail (Historic Freight Route) crossing north part of parcel.
NE $\frac{1}{4}$; S $\frac{1}{2}$ Sec.36 T2N-R9E	480	102	<u>A</u> BABBB	
E $\frac{1}{2}$ SE $\frac{1}{4}$ Sec.36 T6S-R18E	80	101	<u>A</u> CABCB	
All Sec.36 T2S-R9E	589.48	100	<u>A-U</u> BBBBB	Cars on road, people floating River on innertube.
E $\frac{1}{2}$, NW $\frac{1}{4}$, SE $\frac{1}{4}$ SW $\frac{1}{4}$ Sec 16 T2S-R16E	520	100	<u>A</u> BAABC	
All Sec. 11 T7S-R19E	640	99	<u>A</u> BBACA	
All Sec.36 T1S-R14E	640	99	<u>A-U</u> BBACB	Several camp fire rings along stream.

<u>Description</u>	<u>Acres</u>	<u>Total Score</u>	<u>Classification</u>	<u>Historic or Use Evidence</u>
W $\frac{1}{2}$ SW $\frac{1}{4}$ Sec. 16 T6S-R8E	80	96	<u>A-U</u> CBBAB	Developed picnic area near stream.
All Sec. 16 T1N-R8E	640	96	<u>A</u> ABBCEB	
All Sec. 12 T7S-R19E	640	96	<u>A</u> BBBCA	
N $\frac{1}{2}$, less 25 acres in W $\frac{1}{2}$ NW $\frac{1}{4}$ Sec. 16-T8S-R20E	295	95	<u>A-U</u> AACAA	Saw Horseback rider & bridle trails on parcels.
N $\frac{1}{2}$, N $\frac{1}{2}$ SE $\frac{1}{4}$, SE $\frac{1}{4}$ SE $\frac{1}{4}$ Lots 1-4 Sec. 36 T6S-R7E	562.57	95	<u>A-U</u> CCAAB	Campsites, camping fishing, waterskiing
W $\frac{1}{2}$, NE $\frac{1}{4}$ Sec. 16 T2S-R23E	480	95	<u>A-UH</u> ABCAA	U)Yellowstone Bowmar Archery Range. H)Pioneer Cemetery (not visible)
All Sec. 8 T7S-R19E	640	95	<u>A</u> BABCEB	
All Sec. 1, 2 T6S-R30E	1,280	92	<u>A-UH</u> ACBBB	U)Evidence of Indian relic collectors, empty bottles & cans along road. H)Largest known con- centration of buffal jumps in the world.
All Sec. 36 T18N-R55E	651	92	<u>A-H</u> ABCBB	Pieces of petrified wood in rock outcrop
Lots 8, 9, SE $\frac{1}{4}$ SE $\frac{1}{4}$, Sec. 25-E $\frac{1}{2}$ E $\frac{1}{2}$, Lots on East Shore- Sec. 36-T19N-R20E	365	92	<u>A-U</u> BBABB	Firepit near shore i trees, bottles & can steps cut down to sand beach.
SE $\frac{1}{4}$ NW $\frac{1}{4}$, NE $\frac{1}{4}$ SW $\frac{1}{4}$, W $\frac{1}{2}$ SE $\frac{1}{4}$ -Lots 2-4 Sec. 7-T7S-R20E	259.64	91	<u>A</u> BBBCB	
All Sec. 36 T5S-R42E	621	91	<u>A-U</u> BBBCE	Parking area & bottl and cans on parcel.

end of "A" parcel

<u>Description</u>	<u>Acres</u>	<u>Total Score</u>	<u>Classification</u>	<u>Historic or Use Evidence</u>
SE $\frac{1}{4}$ SW $\frac{1}{4}$, Lots 4, 7 Sec. 25, All Sec. 36-T1S-R25E	640 +?	89	<u>B</u> BBBBC	
All Sec. 16 T1S-R16E	640	89	<u>B</u> BBBCC	
All Sec. 5 T7S-R19E	642.08	88	<u>B</u> BBBCA	
All Sec. 16 T2S-R12E	640	87	<u>B</u> BBBCA	
All Sec. 36 T1S-R13E	640	86	<u>B-U</u> CBCBA	Firewood cut & bough shelter in canyon.
All Sec. 36 T8N-R48E	658	85	<u>B-U</u> ABCAB	Fire rings & trash near ridgetop. Motorists stop to rest at turnout.
Pt. SE $\frac{1}{4}$ NE $\frac{1}{4}$; E $\frac{1}{2}$ SW $\frac{1}{4}$, Pt. NW $\frac{1}{4}$ SE $\frac{1}{4}$; SW $\frac{1}{4}$ SE $\frac{1}{4}$; E $\frac{1}{2}$ SE $\frac{1}{4}$ - Sec. 25 T8S- R40E	209.93	85	<u>B-U</u> BBACB	Fisherman on shore and several in boat off shore, water- skier in Lake also.
All Sec. 16 T3N-R29E	620	85	<u>B</u> ABBCE	
All Sec. 36 T4N-R53E	640	84	<u>B-U</u> CBBBC	Parked pickup & camper on East shore of River, cans along shore.
All Sec. 16 T4N-R33E	640	84	<u>B-H</u> ABCAB	"Dinosaur" Fossils recovered by M.S.U students $\frac{1}{2}$ miles east of parcel.

<u>Description</u>	<u>Acres</u>	<u>Total Score</u>	<u>Classification</u>	<u>Historical or Use Evidence</u>
Lots 5,6 Sec.36 T2S-R22E	43.90	83	<u>B</u> BBBCB	
N $\frac{1}{2}$;N $\frac{1}{2}$ SE $\frac{1}{4}$;Lots 1-4 Sec.36 T1S-R11E	489.68	82	<u>B</u> BBBCB	
All Sec.16 T4S-R8E	640	81	<u>B</u> BBBCB	
S $\frac{1}{2}$ NW $\frac{1}{4}$;S $\frac{1}{2}$ Sec.4 T1S-R28E	400	81	<u>B</u> ABCBB	
Pt 4 Islands in River Sec.36 T17N-R55E	75	80	<u>B-U</u> CBBBB	Rock Hounds hunting agates on Beaches
NE $\frac{1}{4}$;S $\frac{1}{2}$ Sec.16 T5S-R52E	480	80	<u>B</u> BBBCB	
All Sec.16 T4S-R16E	640	80	<u>B</u> ABCCB	
NE $\frac{1}{4}$ NE $\frac{1}{4}$;Lots 1,2 Sec.36 T2S-R20E	73.68	80	<u>B</u> ACBBC	
Mona Island Sec.13 T20N-R58E	184	79	<u>B</u> CBBCB	
SE $\frac{1}{4}$ NW $\frac{1}{4}$;S $\frac{1}{2}$;NE $\frac{1}{4}$ Sec.18 T3S-R13E	488.86	79	<u>B</u> BACCB	
All Sec.16 T1S-R44E	613	79	<u>B-U</u> BCBBC	Empty cans & bottles near River
All Sec.36 T3S-R8E	640	79	<u>B</u> ABCBB	

<u>Description</u>	<u>Acres</u>	<u>Total Score</u>	<u>Classification</u>	<u>Historic or Use Evidence</u>
E $\frac{1}{2}$; E $\frac{1}{2}$ SW $\frac{1}{2}$; SW $\frac{1}{2}$ SW $\frac{1}{2}$; Lots 1-5 Sec.16 T19N-R58E	590.96	78	<u>B-H</u> ACBCA	Possible fossils
NE $\frac{1}{2}$; N $\frac{1}{2}$ NW $\frac{1}{2}$; S $\frac{1}{2}$ Sec.22 T3S-R12E	560	78	<u>B</u> BACCA	
All East of River Sec. 36 T17N-R55E	390	76	<u>B-H</u> BCBCB	Possible Petrified wood & other fossils
All North of River Sec. 36 T9N-R47E	175	76	<u>B-U</u> BCBBB	Bottles, cans, fish ing lines near river shore.
All Sec.20 T1N-R24E	640	76	<u>B-U</u> ABCBB	Saw 2 motorcycles fire ring near east side of parcel.
Island in Yellowstone Sec.36 T19N-R57E	170	76	<u>B</u> CBBCC	
All Sec.16 T3N-R45E	640	75	<u>B</u> BBCBB	
Doris Island Sec.12 T20N-R58E	132 ? (96)	75	<u>B</u> CBACB	
All Sec.36 T2S-R21E	640	75	<u>B</u> ABCCB	
W $\frac{1}{2}$ SW $\frac{1}{2}$; Lots 5,6 Sec.16 T6N-R42E	140	75	<u>B-H</u> CCBAC	Sign on Rosebud Cre commemorates meetin place of Gen. Miles & Custer
Island in Yellowstone Sec. 20, 21 T18N-R57E	79	74	<u>B</u> CBBCB	

<u>Description</u>	<u>Acres</u>	<u>Total Score</u>	<u>Classification</u>	<u>Historic or Use Evidence</u>
All Sec.16 T2S-R22E	640	74	<u>B</u> ABCCA	
W $\frac{1}{2}$;NE $\frac{1}{2}$ NE $\frac{1}{2}$; SW $\frac{1}{2}$ SE $\frac{1}{2}$;E $\frac{1}{2}$ SE $\frac{1}{2}$ Sec.36 T7N-R51E	434.19	74	<u>B</u> CBBCC	
All Sec.36 T1N-R8E	640	74	<u>B</u> BCBBB	
Evelyn Island Sec. 7 T20N-R59E	53 (85)	74	<u>B</u> CBBCB	
SE $\frac{1}{2}$;S $\frac{1}{2}$ NE $\frac{1}{2}$;NE $\frac{1}{2}$ SW $\frac{1}{2}$ Lot 6 Sec.16 T2N-R45E	467	73	<u>B</u> BCABC	
All Sec.16 T1N-R9E	640	73	<u>B</u> BCBBC	
All Sec.36 T15N-R55E	640	72	<u>B-U</u> BBCCB	Bottles & cans around firering on side road near smal cave with names written all over walls.
"F" Island (Yellowstone) Sec.30,31,32 T22N-R59E	202.25	72	<u>B</u> CBBCC	
Lots 2-6,8 (island) Sec.36 T7N-R36E	149	72	<u>B</u> CBBCC	
S $\frac{1}{2}$;S $\frac{1}{2}$ N $\frac{1}{2}$ Sec.8-T7S-R28E	400	71	<u>B-H</u> BCBCB	Possible Indian camps associated with buffalo jump on Section 9.
Pt. NE $\frac{1}{2}$;pt E $\frac{1}{2}$ NW $\frac{1}{2}$ Pt. SW $\frac{1}{2}$;pt SE $\frac{1}{2}$ Sec.36-T8S-R40E	417.47	71	<u>B-U</u> BCACC	Fisherman in boats offshore, water- skiers & swimmers offshore also.

<u>Description</u>	<u>Acres</u>	<u>Total Score</u>	<u>Classification</u>	<u>Historical or Use Evidence</u>
All Sec. 36 T7N-R52E	640	71	<u>B</u> BBCCB	
All Sec. 16 T1N-R28E	640	71	<u>B</u> BBCCB	
All Sec. 36 T3N-R30E	664	71	<u>B</u> BBCBC	
All Sec. 36 T2S-R8E	640	71	<u>B</u> BBCCB	
All except E $\frac{1}{2}$ NE $\frac{1}{4}$; Sec. 16 T1N-R54E	545	71	<u>B</u> CBBBC	
S $\frac{1}{2}$, S $\frac{1}{2}$ N $\frac{1}{2}$ Sec. 10 SE $\frac{1}{4}$, S $\frac{1}{2}$ NE $\frac{1}{4}$, E $\frac{1}{2}$ SW $\frac{1}{4}$, Sec. 9T7S-R28E	800	71	<u>B-H</u> BCBCB	Possible buffalo jump area. Known jump, drive rings and teepee rings in NW $\frac{1}{4}$ Sec. 9

end of "B" parcels

Appendix II

Summary List of C Tracts with "A" Classification
in any Subfactor or with
Present use or Historical Value

<u>Description</u>	<u>Acres</u>	<u>Total Score</u>	<u>Classification</u>	<u>Historical or Use Evidence</u>
All South of River Sec. 36-T9N-R47E	175	67	<u>C</u> CCABC	
All North of River Sec. 16 T10N-R49E	103	67	<u>C-U</u> CCBBC	Cans & bottles on shoreline
All Sec. 36 T6N-R35E	640	65	<u>C-U</u> BCCBB	Parking area, cans & bottles near road
SW $\frac{1}{4}$ Sec. 26 T17N-R55E	160	59	<u>C</u> BCCAC	
All Sec. 16 T11N-R49E	640	58	<u>C-U</u> BCCAC	Agate Hunting Rock- hounds from Michiga
All except golf course Sec. 28-T6N-R40E	538.31	56	<u>C-U</u> CCCAC	Rifle range near creek in NE $\frac{1}{4}$.
All Sec. 36 T3S-R27E	640	53	<u>C</u> BCCCA	
S $\frac{1}{2}$ N $\frac{1}{2}$ NE $\frac{1}{4}$; S $\frac{1}{2}$ NE $\frac{1}{4}$; SE $\frac{1}{4}$ Sec. 36-T16N-R55E	280	52	<u>C-U</u> CCCBC	Saw mortorcycle hill climbing.
All Sec. 16 T1N-R10E	640	50	<u>C-H</u> CCCBB	Interesting old homestead, out buildings & wagons in NE $\frac{1}{4}$.
E $\frac{1}{2}$ NE $\frac{1}{4}$; Sec. 24 T2N-R26E	80	50	<u>C</u> CCCAC	
All Sec. 36 T13N-R51E	640	44	<u>C</u> CCCAC	
E $\frac{1}{2}$ Sec. 32 T6N-R48E	320	44	<u>C</u> CCCAC	

Appendix III

Parcels Evaluated in 1971 Recreation Inventory with Unique Historic or Archaeological Values.

Big Horn County

Sections 1 & 2 - T6S-R30E

Largest known concentration of Buffalo jumps in North America, extensive and unique buffalo drive lines, pre-horse and horse-Indian campsites and associated teepee rings, Indian migration route for over 1,000 years. Access road and cattle salting have destroyed some archaeological sites.

Section 9 & 10 - T7S-R28E

Indian migration route for over 1,000 years, possible buffalo jumps, adjacent to known and extensively used buffalo jump on section 9. Planned highway will bisect section 9.

Section 8 - T7S-R28E

Indian migration route for over 1,000 years, possible Indian camps and buffalo drive lines associated with buffalo jump on section 9.

Carbon County

Section 10 - T7S-R19E

Small homestead cabin and part of wagon near Thiel Creek.

Section 36 - T8S-R20E

Meeteetsee Trail, historic stage route from Meeteetsee, Wyoming to Red Lodge, crosses parcel with beautiful and extensive vistas of mountains and plains.

Dawson County

Section 36 - T18N-R55E

Petrified wood and possibly other fossils in rock and sandstone outcrops.

Special Note.

Evaluated Factor values which do not have a complete definitional range and are not identified by "N.A." are meant to be used as values which best fit the parcel characteristics. The 0-5 scale on these factors represents a continuous scale.

Special Instructions and Definitions for Written Entries and Evaluated Factors

Parcel: A parcel is defined as a contiguous tract of state land in one section. If a tract is contiguous to state land in another section and the contiguous land was also evaluated, it should be noted under General Comments.

General Comments: Note any photos taken, unusual features, conditions, springs, weather conditions, etc.

I. TOPOGRAPHY

A & B. Physiographic Types - examples:

Mountains	Plains
Valleys	Hills
Foothills	Buttes
Benchland	Mesas
Alluvial fans	
Rolling uplands	

C. Terrain Variety: topographic variation within the parcel

D. Usable Area: Usually less than 15% slope, suitable for automobile travel with minor additional road construction, and suitable for development of facilities.

The area should not be marshy or subject to annual flooding.

E. Geologic Features: Describe any outstanding or unusual features.

F. Valley, Gorge, Ravine Site Environments: A definable valley, gorge, or ravine within the parcel. If there are several valleys, evaluate the largest or the one with the most potential and note the existence of other valleys. Describe outstanding features. Rate amount of usable area within the valley regardless of valley size itself.

G. Valley, Gorge, Ravine Scenic Evaluation: See V C. Combine both the scenery of the valley itself and scenery as seen from the valley.

H. Ridge top Site Environments: Evaluate the largest, or the one with the most potential. Describe any outstanding features on evaluated site. Rate usable area on the ridgetop regardless of ridgetop size itself. (Same as F)

I. Ridgetop Scenic Evaluation: See V C. Combine both the scenery of the ridgetop itself and scenery as seen from the ridgetop.

II. VEGETATION

A-I. FOREST: An area of which 50% or more is covered with trees as determined by canopy area shall be called a forest for the purposes of this evaluation.

- D. Predominant Forest Type: List association which predominates on parcel (i.e. ponderosa pine - juniper, spruce - fir, etc.)
- E. Predominant Species: List most abundant species (i.e. ponderosa pine, spruce, 50% - 50%, etc.)
- I. Forest Scenic Evaluation: See V C. Describe any unusual or outstanding features.
- J & K. Bushes and Shrubs: Woody plants, usually with no main stem, between 1 foot and 20 feet tall at maturity.
- L & M. Ground Cover: Grasses and forbs (and woody plants under 1 foot tall at maturity).

III. WATER

- A. Name of Waterbody: List name and note if dry in summer or most of year. Evaluate only if water present all year-round.
- B. Stream Fishing Class: Determined by the Montana Fish and Game Department.
- F. Potential Water Activities - Examples

Motorboating	Wading
Non-Motor Boating	Fishing
Rafting	Scuba Diving
Water Skiing	
Swimming	
- G. Comment on Islands: Note size, location and features of any islands present.
- H-N. Stockwater Pits (man-made ponds which nearly or completely become dry in the summer and usually have no active drainage in or out) are not considered lakes.
- H. Lakes: If several lakes, rate the largest but evaluate others on separate sheets.
- I. Lakes: Drawdown; "Pleasant and usable level" refers to the absence of undesirable features such as mud flats, too shallow, extensive or rapid water level fluctuation etc.
- L. Lakes: Shoreline - "Usable shoreline" is shoreline which is potentially accessible by automobile or has very easy foot access. It must also be an area of less than 15% slope with stable soils and/or surface materials, large enough for camping or beach activities during the summer season. Dense vegetation should not block access to water.
- M. Lakes: Shoreline Scenic Evaluation: See V C. Describe any unusual or outstanding features.
- O-T. Streams: A "stream" is any natural year-round flowing body of water, including rivers. If several streams, rate the largest but evaluate others on separate sheets.
- O. Combine all stream lengths if more than one stream on parcel.

R. Streams: Shoreline: See III L

S. Streams: Shoreline Scenic Evaluation: See III M

T. Describe type of road that provides access.

U & V. Marshes: A marsh is an area of soft wet land which is usually waterlogged during growing season. During most years they are covered with as much as 6 inches of water and characterized by grasses and cattails; sedges and sphagnum; or shrubs and trees. Bogs and swamps are considered as marshes for the purposes of this evaluation.

IV. OTHER SITE FACTORS

- A. Accessibility Onto Parcel: Describe distance by road to, and type of, next higher grade road.
- B. Legal Access Onto Parcel: "Legal access" is an established road constructed and/or maintained with public funds, onto the parcel or onto a contiguous parcel of public or state trust land. An Interstate highway without exit or frontage road should not be considered as legal access.
- C. Proximity to Population Centers: List the city that the parcel is in or nearest to according to ratings and give distance and direction as radius from parcel rather than actual road distance.

In category (5) a population of 2,500 was chosen to coincide with the 1970 census definition of the urban population.

In categories (4) - (0) a population of 10,000 was chosen to coincide with the 1970 census data for places of 10,000 inhabitants or more.

- D. Proximity to Major Traffic Routes: "Major" refers to paved designated primary state or federal highways as shown on the 1968 Traffic Flow Map published by the Montana Highway Commission. List Route, distance by road and direction from parcel.
- E. Historic and Archaeological Sites: Describe any site found on parcel.
- F. Proximity to Other Developed Recreational Areas: "Developed recreation areas" is defined as one with developed facilities constructed for use by the public (i.e. rest area, KOA campground, fishing access site, etc.).
- G. Public or Trust Lands: Land owned by the federal or state government. List ownership of contiguous parcels. "Limited" is defined as usually no more than 1 other separate section of public land within the same township, and usually no more than 16 separate sections of public land in contiguous townships.
- H. Evidence of Recreational Use: Describe any recreation occurring on parcel or evidence of past use.

V. SCENERY

- A. Right of Ways: None observed, or; list any right of ways observed (power poles, county road, underground pipeline, etc.).

- B. Environmental Intrusions: Objects or conditions which are distracting to the senses. Describe these in the space provided. A Man-made structure or landscape change should not automatically be considered an environmental intrusion. If, for instance, there is an old homestead which has blended in with the landscape and is pleasing to the eye, then it is not necessarily an environmental intrusion.
- C. Overall Scenic Evaluation: Scenery is a combination of landscape elements arranged in a manner that dramatizes those visual aspects which have special appeal to the human senses. Primary emphasis should be on the parcel.

Some of these landscape elements are:

Vegetation	Water
Soils	Color
Landforms	Man's works

Some visual aspects are:

Harmony	Variety	Perspective
Dominance	Repetition	Form
Contrast	Sequence	

A parcel with a (5) rating has a high and probably unique intensity and combination of the above factors surrounding as well as on the parcel itself. A (0) parcel and its surroundings are actually distracting to the senses.

- D. View: Rate potentially accessible viewpoints with views on or off of the parcel of features near or distant.
- E. Uniqueness: Describe any unique qualities. A "parcel" as used here is any designated unit of land - not necessarily state owned.

SUMMARY RESOURCE DEVELOPMENT PROJECT

Type of Project: Recreation Inventory of approximately 96,000 acres in the Yellowstone River Drainage in cooperation with the Fish and Game Department and the U. S. Bureau of Recreation.

Estimated Cost: ($3\frac{1}{2}$ month project)

Personal services (\$500/ Mo.)	\$1750.00
Per Diem ($2\frac{1}{2}$ months)	650.00
Travel	1000.00
Misc. Supplies	200.00
	<u>\$3600.00</u>
<u>10% over run</u>	<u>360.00</u>
Total	\$3960 = \$4000

Cost sharing by U. S. Bureau of Recreation: 50% = \$2000

Total Estimated Cost to State Lands Department = \$2000

Commissioner Recommends Approval

RECREATION POTENTIAL EVALUATION

COUNTY _____

PARCEL DESCRIPTION _____, Sec. _____, T. _____, R. _____, ACRES _____

General Comments _____

Topography _____

Vegetation _____

Water _____

O. Site Factors _____

Scenery _____

TOTAL _____

Classification _____

Date Evaluated _____ Evaluator _____

Other State Land in Section _____

Evaluated? _____ If not, Why? _____

FACTORS

RATING

I. TOPOGRAPHY

A. Major Physiographic Type. _____

B. Minor Physiographic Type. _____

C. Terrain Variety _____

D. Usable Area _____

E. Geologic Features _____

F. Valley Environment _____

G. Valley Scenic Evaluation. _____

H. Ridgetop Environment _____

I. Ridgetop Scenic Evaluation. _____

II. VEGETATION

A. Forested Acres (percent) _____

B. Forest Cover on Usable Area. High (>50%) Med. (25%-50%) Low (<25%)

C. Forest Cover on Other Areas. High _____ Med. _____ Low _____

D. Predominant Forest Type. _____

E. Predominant Species. _____

F. Forest Pattern and Density. _____

G. Forest Quality. _____

H. Forest Variety. _____

I. Forest Scenic Evaluation. _____

J. Bushes, Shrubs Pattern & Density _____

K. Bushes, Shrubs: Variety. _____

L. Ground Cover: Pattern & Density. _____

M. Ground Cover: Variety. _____

III. WATER

A. Name of Waterbody. _____

B. Stream Fishing Class. _____

C. Streams: Est. Ave. Width _____ Est. Ave. Depth _____

D. Lakeshore length: Total _____ Parcel _____

E. Nearest Road if Over 1/4 mi. from Shore _____

F. Potential Water Activities. _____

G. Comment on Islands. _____

FACTORS

RATING

	5	4	3	2	1	0
H. Lakes: Extent of water Surfaces.						
I. Lakes: Drawdown.						
J. Lakes: Water Quality.						
K. Lakes: Recreation Usability.						
L. Lakes: Shoreline.						
M. Lakes: Shoreline Scenic Evaluation						
N. Lakes: Access to or near the Shore						
O. Streams: Length on or Bordering on Parcel.						
P. Streams: Water Quality.						
Q. Streams: Recreation Usability.						
R. Streams: Shoreline.						
S. Streams: Shoreline Scenic Evaluat.						
T. Streams: Access to or near water						
U. Marshes: Size and Extent.						
V. Marshes: Quality and Variety.						
IV. OTHER SITE FACTORS						
A. Accessibility onto Parcel						
B. Legal Access onto Parcel.						
C. Proximity to Population Centers						
D. Proximity to Major Traffic Routes.						
E. Historic & Archeological Sites.						
F. Proximity to Other Dev. Rec. Areas						
G. Proximity to Other Public or Trust Lands.						
H. Evidence of Recreational Use.						
I. Location of Parcel Relative to Major River or Lake not Contig. to Parcel						
Name: _____						
V. SCENERY						
A. Right of Ways Through Parcel.						
B. Environmental Intrusions.						
C. Overall Scenic Evaluation.						
D. Accessible Views (Vistas)						
E. Uniqueness of Area.						

Norman

RECREATION POTENTIAL EVALUATION
WORKING PROCEDURE

A. At Beginning of Each Week:

1. Determine number and location of parcels to be evaluated during week. Average will be approximately 3-4/day.
2. Check maps & photos or obtain photos from fieldmen or ASCS offices if possible. Arrange photos and/or maps by order of intended visit.

B. Take Each Day:

1. Photo Box
2. Clipboard with forms & guides
3. Name tag
4. Log book
5. Photos & maps (map case)
6. Lessee name, address & parcel description
7. Mileage wheel
8. Highway map
9. Pencil &/or pen
10. Lunch
11. First aid kit
12. Poncho
13. Water can with water
14. Cameras

C. In photo Box:

1. Log book
2. Polaroid camera with extra color film
3. BLM recreation map folder (if necessary)
4. Blank short forms in folder (enough for at least 2 weeks)
5. Folder with extra evaluation guide & guidelines.
6. Folder with tables and graphs (acreage conversion tables, length conversion table, major traffic route map, highway commission's campground & fishing access map, acetate grid for area percentage)
7. Folder with reporting forms
8. Letter of introduction
9. Folder for completed short forms & used aerial photos.
10. Unused aerial photos.
11. Sheet with parcel description and lessee name & address.
12. BLM wall map of Montana showing state land.

D. Daily Procedure:

1. Record starting time and mileage in log book.
2. Record what is done during working hours and interesting happenings in log book.
3. Record quitting time and mileage in log book.
4. Transfer time worked, vicinity and parcels evaluated onto expense sheet.

E. At Each Parcel

1. Call or visit lessee if possible.
Give-name, Land Department, duties, when I expect to be there, access? Recreational use?, problems?, historical sites?
2. Drive or walk to, through, and all over as much accessible terrain as is necessary for complete picture of area. Be sure to walk over at least some of parcel.
3. Make out short form parcel description information.
4. Evaluate parcel using several vantage points if possible.
5. Put used photos and completed forms in a separate folder.
6. Mark off parcels evaluated on parcel description sheet and BLM wall map.